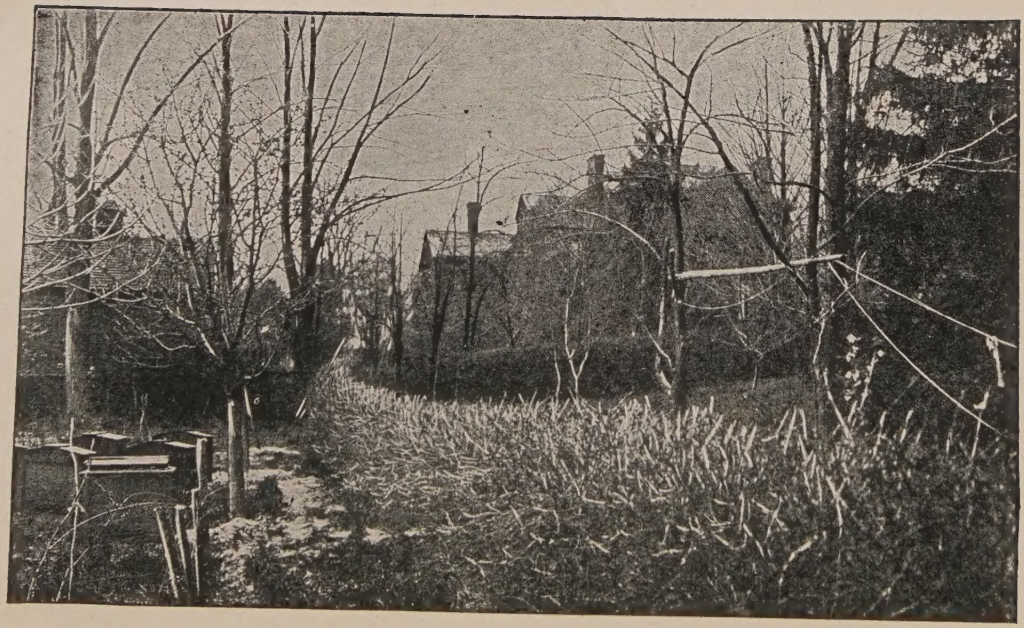
# HEDGES, WINDBREAKS &c.

E. P. POWELL



BUCKTHORN HEDGE TRIMMED FOUR FEET HIGH.

# Hedges

## Windbreaks
## Shelters
and
## Live Fences

A Treatise on the Planting, Growth and Management of Hedge Plants for Country and Suburban Homes

By
E. P. POWELL

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ILLUSTRATED

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# DEDICATION

This book is dedicated to the Farmers of America; the noblest race of men God's sun ever shone upon; a race headed by George Washington and Thomas Jefferson; a race that made the Republic, and that has the future of American freedom and prosperity in its keeping.

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# INTRODUCTION

A book on hedges, live fences, windbreaks and shelters is called for, and I shall respond to the call, with the intention of preparing a compact handbook, that will be of specific use to the largely increasing class of people who appreciate the fact that country life is, or may be, the ideal life. Live fences are of much less importance in the United States since the very general passage of stock laws and their nearly universal enforcement. We do not any longer have to build fences against all the world, but only to see that our own stock commits no trespass. For this purpose wire will be chosen generally where there are ranches or large pastures, while lumber sections will still use board fences. There is, however, sufficient use of live fences to make it necessary to take the subject under consideration. The subject of windbreaks, on the contrary, is growing greatly in importance. The people are waking up to the necessity of an almost universal use of such protections against the drying effect of winds and the breaking force of storms. Ornamental hedges are also growing in favor because of their peculiar effectiveness in producing variety in landscape—besides they always, more or less, are serviceable as windbreaks. The uses to which a hedge may be put are (1) as fence, (2) ornament, (3) windbreak, (4) to equalize moisture and temperature, (5) to furnish bird food.

This last point may not be considered by some people of sufficient importance to be discussed in a practical treatise. I am not sure but it is the most practical and important question that I can possibly lay before my readers. Certainly it shall not be overlooked. The materials to be used for the purposes enumerated class themselves under the head of deciduous and evergreen. These will be separately discussed.

My object will not be to say everything that can be said about my topic, but succinctly and clearly to give necessary information. I shall especially not undertake to create an enthusiasm for hedge planting; knowing well that where such a tendency is aroused it must be well sustained or the results will soon be a disgrace to our farms and rural residences. I shall keep this continually in view to stimulate my readers, and through them the American public, to a higher conception of the beautiful in home-making. The truly beautiful cannot be established by making a fad of any one sort of utilities, or of ornaments like arbors, or of ornamental utilities like hedges. It is by a judicious and thoughtful use of all that nature provides that we make our surroundings the best. It is especially desirable that we learn to discover—to see—what nature freely offers us; for often the most glorious as well as the most valuable things are overlooked, while the inferior are cultivated.

Traveling through the New England states, I am impressed with the fact that—with many noble exceptions—the most beautiful places are those where nature has had most freedom. I have

longed to own some of the superb gardens of pines in New Hampshire, sown not by the hands of men; while my heart has grown warm over many a glorious hillside in Massachusetts where Mother Nature has thrown up her granite walls and lifted her windbreaks, and run charming hedge lines, and dotted the trees just right, in groups and in singles, without a house in sight. Man should go to school to nature before he undertakes to improve nature. But this we should all refuse to do, waste or distort or abuse what is given to us freely. The fact that by far the majority of so-called homes are not homes of reason, taste and high sentiment, of beauty and utility harmonized, remains as the chief disgrace of our communities. I do not mean that we should let things go wild, or that a beautiful shrubbery is most beautiful when least cultivated. Not a spot exists on the globe that does not need exactly what God put in Eden—a man and a woman to trim and control it. A soul is needed everywhere, and a hand, but a brutish soul and a brute-force hand is needed nowhere. Nature does best without both these. Plant, but plant with brains. Trim, but trim thoughtfully. So you will be, not a mere autocrat over the vegetable and animal kingdoms, but a wise and loving friend. The end will be that you will be in love with all about you, and in turn will win all love—till the birds sing for you and the roses blossom for you. Your work in the garden and in the field will become a poem.

I take up this work all the more gladly because of the unexpected, but none the less welcome, reversal of the tide of population into congested city

life. The tide townward, which has gone on since the steam age began, about 1835-40, and with increasing volume up to 1890, has at last begun to ebb. The tendency to move outward has already taken up nearly every deserted farm, and is buying up all available land within one hundred miles or more of the larger cities. The rise of electricity as the world's motive power has made this possible. Steam power never could serve the farmer as it could serve the manufacturer. It built great factories, and around factories grew our great towns. Steam took our best brains and our best hands away from the farm. It took our most interesting employments out of our home life to do the knitting, sewing, soap-making, spinning, weaving, candle-making and shoemaking in vast establishments by machinery. The farmer was left to do, as well as he could, what coarse things were left for him to do, by hand power and animal power. Electricity is bound to reverse all this. Steam was concentrating, electricity is distributive. You can carry steam only an eighth of a mile with profit; electricity you may carry hundreds of miles. The twentieth century will open with a vastly increasing country population, all bound together with telephones and trolley roads. A large share of business will be done by telephone. Merchants will sit in their houses one hundred miles from their stores, yet within speaking distance of their employees. Coming out to breathe pure air and enjoy green fields, the tide will bring wealth and culture and refinement. The country will get back its population, with a gain. We shall once more have our farmer presidents, as in the days of Wash-

ington, Jefferson and Madison—all tillers of the land.

With this drift of the times, nothing can give more pleasure than to contribute to the most enlightened use of the land and the things of the land. We must hasten to reverse the waste of the useful and the beautiful, the wanton destruction of our windbreaks and water preserves. The small contribution of a few rods of windbreaks or hedges or a clump of shelter may seem an insignificant item, but these taken in the aggregate of tens of thousands will do more than large forest plantations and reservations to equalize temperature and water precipitation. Whoever builds a beautiful home and surrounds it with judicious plantings of trees is a public benefactor.

# CHAPTER I.

## LIVE FENCES.

I shall discuss in this chapter the subject of live fences; not because of its general importance, but because of its supreme importance where it is needed at all. The introduction of wire as a material for fencing has become so common, and its adaptation to long ranges is so perfect, while the material is cheap and the fence quickly built, that it has largely displaced the use or need of live fences. The list of plants serviceable for a fence has not greatly changed during fifty years. The Osage orange stands at the head of the list for many sections. It is hardy, robust and capable of turning cattle. The hawthorn is less robust, and is subject to attacks of the woolly aphis. It is also less hardy, while very liable to lose its foliage early in the summer, like most of the thorns, from a fungous foe. The buckthorn is decidedly preferable to the hawthorn for general planting. It is free from blight and mildews, and I have never known it to be attacked by any other insect than the hop louse. This aphis, after several generations on plum trees and buckthorn hedges, migrates to the hop field. The damage done to the buckthorn is not serious, but is defacing. The leaves are curled and young growth is checked. The wild or native crab apple makes a stout defense, and it is also capable of being made ornamental.

Its form can never be made regular, which is often an advantage. Fences of seedling apples have been occasionally tried, and have proved to be more or less useful in turning animals. Their chief value, however, is as windbreaks.

Such hedges if exposed to animals will be pruned by them, and to some extent broken. Their irregularity and unmanageableness soon makes them occupy too much space for a fence. I have also found that the individuality of apple growth is so marked that no two trees can be relied upon to grow with equal vigor or similar habits. One will rise almost as direct as a Normandy poplar and the next sprawl out or show a propensity for weeping. There are special advantages about the three-thorned Gleditschia or honey locust. It certainly makes a formidable fence, and, if well trimmed, is the most beautiful of our live fences. It is impenetrable to man or beast. I have, however, found one trouble that is fatal to this fence, except when used on a small scale; it is very likely to be girdled by mice during the winter months. Where there is a short strip, the rodents can be stopped from their work by the use of coal ashes freely piled along the roots. Willow for fencing has not proved of any permanent value. Where such fences have been planted they have in some cases, however, developed into very good windbreaks. We may therefore pass by all material for live fences except the Osage orange, the honey locust and buckthorn. These three require more thorough examination and discussion.

Osage orange *(Maclura aurantiaca)* is a native of Arkansas and other southwestern states, where

it rises to a forest hight of sixty feet. It is really one of the handsomest of the forest trees of the southwest. The wood is very durable, and said to be more valuable in shipbuilding than live oak. It is otherwise of great use because of taking on a fine polish for furniture. The Indians found it so elastic and tough for bows that they called it bow wood, and the French termed it Bois d'Arc. About 1800 Mr. Choteau of St. Louis planted seed of this tree, and Mr. Landreth of Philadelphia planted it in 1803. Hedges were first tried about 1840. In 1845, that genius of horticulture, Professor Turner of Jacksonville, Ill., reported that it had proved hardy with him during six years of trial. The seed soon became valuable, and was so sought for that the speculative price went up to $50 dollars a bushel. From 1850 to 1870 there was no subject of more importance to agriculture than live fences. Everywhere the best material was sought for, and nothing seemed to be better, especially for the prairie land, than Osage orange. The prairie farmers went wild with excitement. In 1868 alone, Texas and Arkansas received over $100,000 for seed. One nurseryman of Illinois had 400 acres of plants. It was estimated that 60,000 miles of fence were planted in 1869. The cost was figured out at $48 a mile for the first year, about $20 for the second year, about $12 for the third, and after that very little beyond the expense of trimming. But, alas, here was where the trouble came in. Not one mile in ten was ever properly trimmed. The fences grew out of all bounds. The lower limbs died, breaks occurred, while upper limbs threw out ferocious arms to

scratch and tear. I do not know one Osage orange fence now remaining in central New York that is in prime condition. Most of them have been cut down. A few stand as windbreaks, but are scraggy, irregular and unsightly.

On the lower lands of the west, the Osage orange proved not quite hardy. The difficulty was largely with conditions of the soil. Careful drainage was always requisite. Planters soon learned to throw up ridges on which the plants were set. These ridges, twenty inches high, were rapidly prepared with plows, and the plants found the soil thus thrown up in admirable condition to be filled with fibrous roots. As soon as the hedge became strong enough to serve as a fence and turn cattle, root pruning was easily applied—also done with the plow—cutting off the ends of the roots with a revolving coulter. This combination of hedge and ditch was found to make a very admirable fence. These open ditches, run alongside of the hedges, served as drainage channels during the wet months, also holding water for stock during the dry season. When deepened into pools, they were found to be of decided value on the level lands of the west. During the dry season such channels act as ditches always do, not to render the soil more dry but more moist. In some cases farmers grew corn rows on both sides of a ditch in order to preserve the water as late as possible in summer. As a rule, the best live fences required double setting. Single rows did not prove absolutely a defense against hogs and sheep.

The use of honey locust *(Gleditschia triacanthos)* began a few years after that of Osage orange.

It proved to be more hardy, and although the foliage gives it a more delicate appearance, the thorns are strong and the wood is stiff from the outset. A very young hedge of this sort will turn animals. About 1870 the honey locust was considered just the thing we had long sought after and needed. It was planted in the eastern states much more freely than the Osage orange had been used. From observation I conclude it has not proved entirely unsatisfactory, yet there are more short lines of this fence still in existence than of any other throughout New York state, and a few of them are in good condition as fences.

Next to the Osage orange and honey locust, the buckthorn, although less robust, makes a fairly good live fence. It has the advantage of being more beautiful in growth than the Osage orange and less savage in its thorns than the locust. It is possible to tolerate a buckthorn fence very near your house.

In preparing the soil for a hedge fence it should be thoroughly cultivated for a width of at least three or four feet. The ridges that are made by the plow should be thrown toward the center. In stiff soils this may be advantageously done in autumn by throwing the furrows on each side from the center of the hedge line. This will enable the frosts to penetrate, and loosen the soil and the subsoil. A little preparation in spring and you are ready for planting.

If it is desired to create a fence for immediate use, set your plants from twelve to fifteen inches apart, and in a single row. But if the object of the fence is to turn animals, and the desire is to have a

long-lived and perfect fence, set your plants at least two feet apart. If the land be dry and high, it is as well to plant in the fall; perhaps, indeed, this is preferable; but on low and wet soils, by all means defer until spring; although the ground should be under preparation, as I have stated.

A perfect live fence depends, however, not only upon the planting, but also upon the treatment it receives during its early years of growth. It should in all cases be sharply cut back to uniform hight at the very outset. As a rule, two-thirds of the wood should be cut away by this first pruning. After the first year, the object of pruning should be to broaden the base about one-third as fast as the top is raised. When the fence is grown to a hight of six feet the base should be at least four feet. All pruning must be directed to the establishment of this pyramidal form. Supposing the young plants to be cut back to five or six inches from the ground at the first pruning, during the first summer they should be cut back so as to increase the hight not to exceed two inches. There will always be a tendency to throw up a few very strong stems, and these will draw the strength from others, so that if not checked they will very speedily ruin your fence. These stronger shoots should be kept well in hand, cutting them back so that they will break their force into several shoots in line with the fence. In fact, the application of common sense must be continuous through the first year's growth of your fence. Bear in mind simply that the object is to create a pyramidal form and to compel the side shoots to form thickly near the ground. The failure with live fences has always

laid at this point, that farmers have not been disposed to give their hedges sufficient attention to keep them in proper style of growth. If such attention can be secured for the first four years, the fence will need comparatively little attention thereafter.

When the live fence is intended to serve also as windbreak, and the enclosure is for horses and sheep, it is possible to use evergreens. Where cattle are to be enclosed, evergreens would be speedily torn and their beauty destroyed, if not their utility. However, I know highly valuable windbreaks of spruce and others of arbor-vitae that are as stout as if built of oak posts and hemlock boards. It takes twenty years to get such a fence well grown. The plants should be set two or two and one-half feet apart. Growth will gradually close up the spaces so as to present a nearly solid wall at the base. A close park can be created of this sort, as a deer enclosure, or for ordinary farm stock. Meanwhile the fence is serving a much better purpose as windbreak. But of this topic I am to speak more distinctively in another chapter of this book.

About 1870, stock laws began to be passed by the states compelling every citizen to fence in his own animals, and not to fence out those of his neighbors. These laws, although at first met with bitter opposition, proved to be so just and economical that by 1880 they were nearly universal. A few states made them optional to the vote of counties; but while this gave conservatism a chance to discuss, the result was overwhelming in favor of the new system. It was established that New York alone saved $150,000,000 in fencing material, and Missouri was

estimated to save at least $90,000,000. It was a distinct triumph of progressive agriculture. A secondary result was to greatly decrease the call for material for live fences. The use of wire had already begun and shortly completed the revolution. From that time, about 1885, the enthusiasm for live fences waned. I have not seen such a fence planted in central New York during the last twenty years. It is only in conjunction with hedges and windbreaks that the live fence topic remains of any importance. I shall be excused if I give to this branch of my topic only this brief chapter.

Confirmatory of my own views of live fences, I shall give at this point two or three letters from some of the most eminent horticulturists of the United States:

ITHACA, N. Y.

*Dear Mr. Powell:—*

Hedge fences, or live fences, are no longer used to any great extent in America, so far as my observation goes; and there are several reasons for it. The chief of these is, I think, that timber has become so very cheap; another is that labor is high priced, and another that our distances are so great that the expense of putting in live fences has proved to be considerable. Perhaps the dry and severe climate has something to do with it. I presume the national taste or temper also has an influence. Hedges are used for small effects about buildings, but it is comparatively rare that they are used for the main fences of the farm. In fact, fences are no longer looked upon as necessary features of the farm. They are liable to be in the way of the requirements of grazing changes. The farmer is no longer obliged in New York state to keep up his line fence. Yours very truly, L. H. BAILEY.

GERMANTOWN, PA.

*Dear Mr. Powell:—*

Live fences as means of turning cattle have been practically abandoned in Pennsylvania, but as fences for ornament they are very popular. Some little is being done by combinations of galvanized wire and inclined Osage orange fastened to the

wire, as a protective fence; but the ignorance of sound principles in pruning, which has had much to do with the failure of live fences, will soon leave these combinations as inverted broomsticks turned over by the wind. For all our literature, I am ashamed to say that sound horticultural knowledge has not thoroughly prospered in the United States.

Sincerely yours, THOS. MEEHAN.

GRAND RAPIDS, MICH.

*My Dear Mr. Powell:—*

There are constant reminders of the wave theory of accounting for almost everything in the universe. We had a wave of planting live fences along in the seventies—a regular tidal wave. But after a few years we began to feel very tired over the results, and the digging-out process is still going on. The hedge fence is entirely unsuited to the American farmer. He will not give it the attention necessary to make it effective as a fence, and when it does not accomplish that purpose he has no use for it. Osage orange was used mostly in our section, but there are relics of honey locust fences occasionally to be found. In some places where windbreaks are desired, the Osage is still retained and is quite effective although for this purpose alone other plants are more desirable. In a few places in our state the white willow was sold by enterprising agents, and the farmers were deluded into the belief that in ten years they would become a stock barrier. Of course, for fencing purposes, the willow was a failure; yet many miles of these willows have done good service in holding snow on wheat fields during trying seasons. My own opinion of hedge fences is that they do not add to the attractiveness of the country. Compared with wire they are expensive. If allowed to grow high they hide the landscape, and give an air of exclusiveness that is un-American. Fences are growing unpopular, and the meanest fence to get rid of is the hedge fence.

Cordially yours, CHAS. W. GARFIELD.

There may be, however, some people who still desire to plant live fences, and I desire in this brief chapter to give to such all the information that is requisite. I shall therefore close the discussion by giving a short and admirable paper by Robert C. McMurtrie of Philadelphia—in its entirety. It is the best brief statement I have ever seen for dealing with the Osage orange.

## OSAGE ORANGE FENCES.

*Raising Plants.*—The seed can generally be purchased of any seedsman. I soaked the seeds in water for forty-eight hours before planting. When treated thus they sprouted almost as freely as could be desired. Those not soaked came up sparsely and very badly.

The ground was prepared as for ordinary garden seeds. The seed was placed in rows, about one foot apart and about one inch deep. I kept the plants carefully weeded from their first appearance till the autumn. The result has been that plants raised one spring are fit for setting out as hedges the next spring.

*Preparing Ground for the Hedge.*—In the autumn the line of the ground on which the hedge is to stand is dug as a trench, about eighteen inches wide and one foot deep. The earth is laid on the side of the trench and the bottom broken with a pick. In that condition I left it during the winter for the frost to do its work.

*Cultivating or Tilling.*—In the spring when the ground is warm enough to cause the plants to show the first symptoms of life, by pushing, I put a quantity of the best barnyard manure in the trench or ditch, and on that placed the loose earth left lying at the side during the winter. In this ground the plants were placed. If in two rows, eighteen inches apart; if in one row, nine inches apart. The latter, I am inclined to think from experience, is the best for every purpose.

The plants thus set out were kept carefully

weeded and cultivated all summer. They sprouted slowly and very irregularly. But these were plants purchased. Those I grew were much quicker and more uniform. By the end of July nearly every plant was growing. In one instance, by count, I found but two out of two hundred and eighty failed.

*Subsequent Treatment.*—In the autumn, the plants treated as above stated had grown, in single stems, from three to six feet high, depending on the earlier or later start. The stems were quite thick.

These I laid down without cutting, nicking or breaking, by simply bending them nearly flat to the ground and weaving them as one would osiers in wicker work. There is little elasticity but great toughness in the wood, and the thorns secure them in place, when bent and woven, without tying or any other sort of fastening.

The next year the hedge started with an average hight of six inches from the ground, or the stems thus lying laterally along the ground. The leaf buds sent up shoots similar to those of the first year, but thicker and higher; many grew eight feet. The ground was cultivated with a hoe and weeded. In the autumn these stems were again laid down, without nicking, breaking or cutting. This made a hedge of lateral stems about eighteen inches from the ground.

The next summer the shoots grew, the upright ones much more vigorously than the laterals. When the upright shoots reached three feet or more I cut the tops with a sickle at the hight I determined. This was repeated at intervals, whenever there were a few inches above the line determined, from time

to time, as the hight of the hedge. This permitted the shorter and weaker stems to grow without checking till they reached the proper line.

The result was, that in the third summer from setting out the plants there was a good hedge, sufficient to turn ordinary cattle, as it seemed. Certainly in all subsequent years it was impervious to man or beast. And it had a foundation as firm as a fence.

*Cutting.*—If this is done when the plants are young, they are so succulent that an amateur can readily trim two hundred feet in an hour, and feel no fatigue.

*Laying Down.*—I have this year adopted a plan that I deem a great improvement, and I have done it with stems varying from a quarter to an inch in diameter, thus: I cut off with nippers a number of stems to the hight of two feet, so that the stems, left at each end of the cutting, when laid down and woven into the upright cut stems, would cross each other, and give at least two lines of lateral stems, passing in and out of the cut stems, thus giving a living fence of about two feet high. I expect to trim the growth from these next summer to about three feet high, leaving the laterals to grow with little or no trimming, to form the hedge into the pyramidical form; which is essential, as lower branches will not flourish if upper branches overhang them.

If anyone can show more perfect fences that have thus been produced, I have yet to see or hear of them.

## CHAPTER II.

### DECIDUOUS HEDGES.

The satisfaction with which we dismiss live fences is more than doubled by the gratification derived from the study of hedges; whether those strictly for ornament or those for utility as well as ornament. It is a confirmation of the belief that horticultural taste is developing in America, that hedges are growing in popularity. In all parts of the country the demand for plants is increasing; and this book will find its more specific use in giving all required information on the planting, growth and management of this department of horticulture. I shall be compelled in this chapter to refer to some material developed in the previous chapter; because the thorns, the Osage orange and the honey locust may be used for beautiful as well as discordant purposes—and so need not be discarded from our beautiful plantations.

### SECTION I—MATERIAL.

There is no mistaking the conviction of farmers that where a hedge is needed the gleditschia or honey locust hedge is more satisfactory than the maclura or Osage orange. I find very few hedges of the latter in even tolerable condition, but many of the former. The gleditschia should not be allowed to

FIG. 2. EVERGREEN HEDGE BORDERING DRIVES.

grow over two to three feet in hight, if you expect it to keep good form. The tendency is very strong to die out at the bottom, and expand the top limbs. When this is allowed, there are sure to follow gaps in the outline of the foliage. The Osage orange has this one advantage, that it is free of insects, and in the hedge form I have found it to be entirely hardy in central New York. It is not given to suckering unless cut down, when it does incline to be troublesome by filling the ground. I have no doubt that both the plants will for some time to come be favorites with the farmer. He cannot divest himself of the sentiment that whatever he does must have more or less of utility in its purpose. He will undertake to have his hedges of some direct value besides ornament. Nevertheless, I advise hedge planters to discard both the maclura and the gleditschia, because they are very liable to get out of complete command, and so become merely thorny, irregular and homely nuisances.

The pyracantha thorn as a hedge plant has the advantage that it is not only capable of resisting cattle and even turning hogs and sheep and fowls, but its growth is compact and so close to the ground that it is easily managed. The southern or red-fruited pyracantha is not quite hardy at the north, while the white-fruited is entirely hardy as far north as New York. I find its foliage blisters somewhat and the ends of the twigs are sometimes killed in central New York. I can hardly conceive a pyracantha hedge looking very badly from neglect. When not somewhat blistered by the frost it keeps green all winter. My own plants blossom not unfre-

quently, and yet give me very few seeds. Notwithstanding the slight damage done by frost, I think it fair to recommend this thorn as a very good hedge plant as far north as the lower counties of New York state. It will work admirably also to fill in larger gaps that occur in larger hedges.

This thorn is not a native, but was introduced from Germany by Parsons and company, about 1860. It is grown readily from cuttings, which is the only practicable method of multiplying it, owing to its shy seeding. Bear in mind, however, that the pyracantha is very thorny. It is ornamental if you do not get too near it. Its place is on small farms or fruit-growing homesteads, where it is desirable to prevent the too free movement of fowls. It would be just the thing around an exposed fruit yard. A thief would never twice try to get over or through it. It would not be possible to mutilate the hedge or cut a passage in a hurry.

The thorn genus has been very generally used in America. Before the introduction of the maclura the different members of this genus constituted nearly all the hedge plants in general use. The hawthorn is best known because of its reputation in England. The moist climate of that country suits it far better than our dry summers. The very handsome foliage is liable, with us, in common with that of other thorns, to mildew and turn black soon after the period of flowering. It is a very long-lived plant; Loudon says that it lives to be one hundred or two hundred years old. Among our more common shrubs and trees it has no rival in age, except perhaps the apple and pear. Of

the apple, I have on my ground specimens that are one hundred and ten years old. These were planted when the Iroquois were still in possession of central New York. Pear trees are known in Michigan, planted by the French, as long ago as the founding of Detroit. I do not know of any hawthorn bushes in this country that are very old, but in England the record is fully two hundred years. Growing wild, the hawthorn is almost always found as a dense bush, somewhat like wild apples. This is owing to the fact that cattle have browsed the young trees and made them dwarf bushes. These are the favorite resorts of the sly catbird. On our lawns, when well cultivated, the hawthorn grows to about twenty feet high, and is covered with delightful flowers. It takes cions of pear and apple as it is a member of the rose family. All the tall growing varieties are much alike in shape and vigor and growth. In our nurseries are to be found several beautiful sports and crosses. Among these are Paul's double scarlet, the tansy-leaved, the black-fruited, the glossy-leaved, Gumpper's and the double white. Many of these I have found growing wild in our forest edges and glens, probably the result of seed sown by the birds. All of these varieties are equally useful for hedges.

The cockspur thorn is more commonly used in this country than the hawthorn, or any other thorn, except the black or buckthorn. It has a single sharp spur under the leaf, like the spur of a cock. In the West I have seen these growing wild in most picturesque and delightful forms. It only needed man's hand to arrange and control their growth, in order

to create a work of great beauty. They spread out their heads densely compacted, and if undisturbed they will touch the ground with their overhanging limbs. When browsed by sheep they form a wonderful canopy over wide patches of the pastures, where these animals lie down out of reach of the sun's rays. There are many varieties, characterized by form of leaves and color and by size of bush. They are, everyone, admirable for hedge work.

The honey locust deserves a few additional words owing to the peculiar beauty of its foliage. Its thorns are the most perfect weapons known in nature, but unfortunately they are dangerous. When broken from the hedge they cannot be stepped upon with impunity by man or beast. The trimmings are not easily gathered and removed, yet they should be not only removed but burned. It will not do to throw them into refuse holes or brush piles—especially not by the roadside. Notwithstanding the beauty of the plant and its usefulness as a hedge, the danger from its thorns is so great that I believe, as a rule, it should be given up. I have not in my own range of observation known of a single rod of gleditschia hedge that remains in preservation. I have seen miles of it planted, and miles of it gone wild and unmanageable. When once out of hand it can never be reduced to order and beauty. It is as much as a man's life is worth to undertake such a task. I go so far as to refuse to allow even a tree of this brutal thorn to grow on my land.

There is, however, a thornless variety of gleditschia, very little disseminated, which will surely make a remarkably strong and beautiful hedge. I

obtained my seed from Kansas, but some of the products have more or less of thorn. I have now growing one superb tree which is absolutely thornless. It has the exquisite leaf beauty of the thorny variety, its fine foliage, and is what no other tree is even comparatively, a sifter of the moonbeams, a most elegant tree for night scenery. Apart from the gnawing of mice in the winter, I see no reason why this plant should not be very valuable for hedges on our choicest lawns. It has the most remarkable combination of strength and compact growth with beauty. It is also a very rapid grower, while it endures the severest cutting. I am inclined to think the plants should stand at least two feet apart, and a good deal of care be taken to have them of nearly equal vigor of stem and root in planting. Even if it be desired to have the hedge turn back animals, I think we have here a very promising plant.

Michaux, who was as capital a landscape economist as he was a botanist, called attention to the value of the scrub oak *(Quercus ilicifolia)*, sometimes called the bear oak, as a material at hand in New Jersey, and elsewhere in sandy soils, for hedges. He says: "The presence of this oak is considered an infallible index of a barren soil, and is usually met with on dry, sandy land mingled with gravel. It is too small to be adapted to any use, but near Goshen on the road to New York I observed an attempt to turn it to advantage by planting it about the fields for the purpose of strengthening the fences. Though this experiment seemed to have failed, I believe the bear oak might be usefully adopted in the Northern states for hedges, which might be formed from

twenty to twenty-four inches thick by sowing the acorns in three parallel rows. They would be perfected in a short time, would be agreeable to the eye, and would probably be sufficient to prevent the passage of horses and cows." The plant is an abundant bearer of seed, yet I do not know that the suggestion of Michaux has been put to test. But nature has used the scrub oak very freely in making wild hedges of great beauty. The chief advantage of such suggestions is to teach us to keep our eyes open to the possibilities about us, and be ready to put an old thing to a new use. A wide-awake mind is never at a loss to find a chance to exercise a creative purpose. A person blind to nature is always compelled to follow in old routine tracks, and so misses some of the finest opportunities that nature affords him.

Among the newer shrubs and trees available for hedges we may enumerate the Siberian Pea tree *(Caragana arborescens)*. This is a small tree, growing from fifteen to eighteen feet in hight, but it bears pruning admirably well. It is hardy even to the very northern limits of our states and Canada, at the same time endures severe drouths. I think this will prove to be a desirable addition to our hedge plants. The Kei apple is another importation of our Department of Agriculture which promises to be of considerable use to us. It is the best South African hedge plant; and becomes, if untrimmed, only a tall shrub. It may be ranked among the strictly ornamental hedge plants.

However, I do not myself believe there is any deciduous plant anywhere near equal to the buckthorn (or black thorn) for universal use as a decidu-

ous hedge plant. I place it at the front, as I shall hereafter place arbor-vitæ at the front of evergreen plants for hedges. It grows with an even spread and bears rational cutting admirably. It has no enemy that I ever heard of except the hop louse, which it is compelled to harbor for a couple of months. This louse does not appear every year, and if properly attacked it can be destroyed with a spray of strong kerosene emulsion. Although not a thorny or harsh plant, the buckthorn is very firm in growth. I have already spoken of its capacity, in a previous chapter, for turning cattle, when it is allowed to grow six or eight feet high. At that hight it is also a very handsome screen, but for ordinary purposes a hedge of four to six feet is much better. At this hight it is easily trimmed, and the form of the hedge can always be kept without trouble. The growth is neat and tidy, if not remarkably handsome. When neglected, it can be cut back to renew its form without injuring the hedge, and it does not become at any time, under the worst neglect, as horrible a sight and as terrible a nuisance as neglected Osage orange or honey locust. In fact, I have seldom seen a buckthorn row given up. Even when neglected and practically useless as a fence, the owner is inclined to keep it as a hedge.

I find, after careful examination, that among the farmers of the Eastern and Middle states, the hedges which have been best preserved and most useful are (1) the buckthorn, (2) the gleditschia or locust. I find also that the buckthorn is invariably in the best form as a hedge; although I judge that the thorn has done the most service. The latter is, however,

FIG. 3. WINDBREAK ON GROUNDS OF HOUGHTON SEMINARY, CLINTON, N. Y.

in no case that I know, presentable as a landscape ornament. Invariably it has become scraggy, gappy and very uneven. Most of the hedges that are retained are evidently pieces, where most of the original planting has died away. I asked a farmer why he kept a rather disreputable strip in front of his homestead. He answered, that, bad as it looked, it hid his yard, which looked worse. It is not impossible that a good many others feel like this, and choose the street hedge as a cover for nasty habits. Therefore, I say once more, down with street hedges or street fences, alive or dead.

There is the common trouble in growing Osage orange and gleditschia that mice will gnaw them in the winter. They frequently girdle a large number of plants in a single season. Where it is desirable to grow a short strip for ornamental purposes, or for landscape use, the intrusion of these rodents can be in part prevented by keeping from about the roots any refuse or grass, and raking away the leaves before winter sets in. Besides this, I would recommend in October or November a good mulch of coal ashes. It has been recommended to scatter along the hedge, peas soaked in arsenic to poison the mice. Any ill-smelling stuff is an additional protection. But I believe that coal ashes will always prove the best preventive, while it is at the same time a grand weed killer. There has been a very substantial error about this material in the minds of the people. Because it is in a very small degree a direct fertilizer does not argue that any material may not help roots to take manure from the air. This is exactly the office performed by coal ashes. It lightens clay soil,

and helps it to absorb nitrogen. The soil under a mulch of coal ashes will be found to be friable and rich. I have seen the most barren ground made into a rich garden with nothing but coal ashes forked in in considerable quantity. I use it about young apple trees to prevent the borer from working; it is equally good about all other trees that are occasionally attacked by boring insects. You will make no mistake in using anthracite coal ash about your hedge row. You may place it on very heavily, and you will find the result will be beneficial in all ways. It will at least have checked the working of mice, and in almost all cases have prevented it.

## SECTION II—PLANTING DECIDUOUS HEDGES.

*(1) Size of Plants.*—Whatever the material, I prefer two-year-olds or sometimes three-year-olds to yearlings. Such plants, to make rapid and satisfactory growth, should be stocky to begin with, and then cut sharply back. However, when long lines are to be run, one-year-old plants will be generally planted, and will probably be satisfactory.

*(2) Running Lines.*—When drives are to be bordered, curves are frequently necessary. In this case great care is needed at the outset, for if a mistake is made it is going to show worse and worse as long as your hedge exists. My plan is to set small stakes over the lines to be followed, and then to go over these again and again, until I am quite sure that my curves are where they should be, to accommodate drives and to satisfy the eye. At this point be sure that you do not

trust a landscape gardener implicitly, for while he may be skilled in his selection and grouping of plants, he may wholly lack an eye for such lines. Many a time such a defect in vision is unknown to its possessor. In fifty years of landscape work I have never found but one man who could materially assist me in working out long and double curves—he was a common Irish laborer with a gift. A long sweeping curve is not easily established and it grows all the worse when one curve is to be multiplied by another.

*(3) Preparing the Ground.*—This is an important point. The ground must be as clean as a garden and thoroughly tilled into loose friable condition. There is no use sticking plants into half-prepared soil. Where the sod is tough and vigorous it should have been tilled with some hoed crop during the previous year. The rotted turf will then make excellent soil for hedge planting. Before setting, let the soil be thrown, by back furrowing or by the spade, toward the center, enough to form a slight rise, that will carry off rather than retain water. After planting, there will be more or less settling, and your ridge will not be perceptible. If you are obliged to run through wet places, drain on both sides, throwing up the line of the hedge with soil from the ditches.

*(4) Setting the Plants.*—All tricks and devices for saving labor at this point are undesirable, if you intend to make sure of your hedge. There must be no mistake about the mellowness of the soil, and if two-year-old plants are used, a trench must be ready along the line of your stakes. If one-year-old

plants are to be set, you may use a spade as you proceed, or a dibble. Spread the roots at the bottom of the trench, and set the plant two or three inches deeper than it was in the nursery row. Firm the soil with great care. This is the most important point in setting out plants of any kind as well as in planting trees. In the case of the hedge plants, it is absolutely necessary. I advise you to tramp the soil as solid as possible with your feet, or let a man follow whose business it is to pound down the soil with a heavy rammer. You may be sure that no harm will be done.

*(5) Spacing.*—My own preference is decidedly for more room for each plant than is generally given. When placed six inches apart, many plants in the process of growth are dwarfed or weakened in vitality, if not killed outright. I set two or three feet apart. Dr. Warder recommends this in his book on hedges (now out of print) and he did wisely. He says: "I consider that most writers and planters have committed the great error of crowding. The different plants used in hedges are so varied in their habits that no fixed rule can be laid down for all of them, but be sure to avoid setting the plants too closely." For the honey locust, which attains in its individual growth a diameter of from one to three feet, Dr. Warder would prefer a distance of twelve, eighteen or twenty inches. I have found this plan far better for every plant that I have ever tried or seen tried. The honey locust, the hawthorn, the buckthorn, the Osage orange and all of the shrubs that attain any size, should be given at least one foot in the row, and from that up to two or even three.

I have suggested requisite room for requisite strength and vigor. In other words, every plant must have root room in order to make a healthy top. I object entirely to the plan of setting plants in double rows alternately. There will be trouble enough in keeping a well-trimmed hedge within bounds. Therefore, begin with one row of plants. Those who argue for close planting do so on the ground that gaps will be filled by overhanging limbs. But a rightly managed hedge must not have gaps. The whole space should be filled wholly with branches interlaced until the wall will be too close for us to see through. The question is asked, why not set the plants still farther apart, and by bending down interlacing branches, create a compact wall or even impermeable fence? Simply because it would require patience and care and labor that would not often be given to a hedge, and the result would be, in all probability, a failure within two years. Rustic walls of the kind suggested, like rustic arbors, are the work of time and of genius. They are seldom produced in perfection.

*(6) Mulching.*—As fast as your hedge plants are set they should be mulched. Use whatever material is most easily obtainable in your section. As a rule, sawdust is most convenient and cheap. Others may most readily obtain coal ashes. I have referred to the use of this material already. It must be understood that reference is made to anthracite coal ashes and not to bituminous. The latter material contains too much sulphur to make it safe to use in any large amount in our plantations. The coal ash from anthracite coal is not only safe but

unexcelled in all ways for mulch. It is pervious to the air and it retains moisture. It does not permit weeds to grow readily, and it keeps clay soils from hardening. Use all that you can get, in your compost piles and for mulching. When it is more convenient, fine cut straw or fresh cut grass makes a fair substitute; yet it is liable to attract mice, and will be blown away unless held in place by a sprinkle of earth.

*(7) Renewals.*—The first year will certainly develop gaps in your hedge, whatever care may have been used in planting and mulching. These gaps should be filled the next spring without fail. It will not be easy at best to give these new plants a good chance between the older ones. It will be well to select as large plants as possible, and to take special care in setting and puddling them. Let mulching be very carefully and promptly applied.

*(8) Watering.*—It frequently occurs, as in setting trees, that a dry spell follows. Whatever care may have been used in thoroughly watering the hedge when planted, it will be necessary to keep up the supply for some weeks afterward. At all events, the hedge plants must be well started into growth, and the young rootlets be well developed before they are given over to nature. Watering is always a science. As it is usually performed it kills more than it benefits. It should never be superficial, for that will solidify the soil and then bake a crust, from which the showers will flow quickly off. This crust also prevents the natural absorption of moisture from the air. To water correctly, dig a hole by the side of every tree or bush, and pour in enough

water to wet the roots thoroughly. This will require a good deal of labor, but when once performed it need not be frequently repeated. After the water is poured in and has settled, draw over a little dry soil to prevent evaporation. In this way the soil becomes permeated, and remains wet. This is the rule for all plants. Pour a quart for a strawberry, pour a pailful for a tree. For a hedge it may be best to run a furrow on each side and pour the water in the trough. Then haul back the soil to cover with the plow. If you have a well near by, attach a hose and let the trench be filled by pumping. But to throw water with a hose through a sprinkler over the soil is worse than nothing. It requires almost continuous sprinkling to make this method of watering of any value, even for a lawn of grass.

*(9) Trimming.*—I have suggested that plants should be cut back when set. This matter of trimming is one of the most important, from first to last. It is requisite to get a thick bottom to the hedge, and to do this, in almost all cases, the plants must be cut nearly to the base the first year, and compelled to spread laterals. Cut down to the collar, making the branching start out so that the lower limbs will lie upon the ground. If you have followed directions you have set your plants two or three inches deeper than where they were as seedlings. It will now be your object to keep the hedge from growing upward, and make it spread out and keep its lower limbs vital. This is the constant aim in hedge-growing. The law of nature, that a tree shall climb upward, and as it climbs take away a part of the strength of the

lower branches to make new ones above, must be held in check.

Where hedges have to serve partly for utility, in turning hens or possibly larger creatures, impenetrability must be sought for. Your wish is to divide vitality and distribute the growth evenly to all branches. A perfect hedge is as strong in one point as in another. To secure this requires that there be no neglect during the first three years after planting. No part must get the advantage. Then after your hedge is well established, if neglected for a year or two, the balance will be broken; and a few branches will have surmounted the rest, while a part will have died out altogether.

Most of the deciduous hedges as they grow require trimming twice a year. This should be done in May, and at such time later as growth may indicate necessity. The buckthorn, as a rule, should be cut the second time in July or August. When the growth has been checked by drouth I have sometimes trimmed as late as September. When first planted, and until well shaped, I trim three times or even more, being regulated solely by the rapidity of growth. Nearly all deciduous hedges have a habit, while young, of sending out a shoot here and there of unusual strength. These must not be allowed to get much start, or they will have accomplished a good deal very quickly in the way of weakening other shoots. It must, however, be remembered constantly that, if you trim a hedge very late in the season, there will be a growth put forth that will not have time to ripen its wood, and you will get winter-killing of even very hardy plants.

The shape of a deciduous hedge should be about that of a very young bush of the same plant where it stands wild. It should have a broad base and rise to a round top—never to a sharp or pointed top—and equally never to a flattened top. The hawthorn, and particularly the buckthorn, submit to a very neat oval shaping, but should have the lower branches a little longer than the others. The Osage orange is not so submissive to form, but it may be kept reasonably in bounds if never given any freedom. The pyramidal form is an outrage on nature, because it is never undertaken with deciduous plants in their native state. In all cases avoid artifice and the artificial; follow nature's outlines, and heed nature's suggestions.

Whatever may be said of special tools for more rapid cutting, nothing is so satisfactory as the long-handled hedge-shears. The blades of these should be fifteen to twenty inches long. If trimming is done coarsely it will tell, in the process of the years, in an ungainly hedge. For cutting strong branches it is necessary also to have what are called hedge-clippers. These are short curved shears with handles three feet long. They will sever a half-inch branch readily. For ordinary trimming these are not needed, but will be of importance when the hedge is to be cut back, or when from neglect a hedge has to be reshaped. The same tools are useful for much other work about trees and shrubbery. They should be kept sharp so that one-half of power may be saved in using them. Dull tools of all sorts will be found a dead loss. They use up wastefully a large part of your power, and all of your patience and good cheer.

Successful horticulture is a happy combination of wit and grit. Failure in farming is mostly the result of leakage of power and waste of crops. However, when economy of time is very greatly desired, the trimming of the first three or four years can be performed with a sickle. Give a quick motion in the way the branch grows—that is, with a slant upward. Hold the sickle reversed and strike sharp and quick; a slow movement will drag the branch. This tool is satisfactory for all fairly strong and stiff shoots. But as the hedge gets shaped, and the shoots become finer, they require more smooth and accurate cutting. Bear in mind that I do not recommend the use of such tools, but by all means would prefer the shears.

Can the spring pruning of a deciduous hedge be as well done in midwinter, or March? I can only answer this with a very positive negative, when you are dealing with an evergreen hedge, but it may be advantageously done in the case of such plants as buckthorn, hawthorn and Osage orange. There is no reason why a sharp heading-in of a thoroughly hardy plant shall not take place at any time after nature has laid aside her tools, and the hedge is in a state of absolute rest. I would not, however, begin the work before near the close of winter. There is one advantage in following this line of advice, because you can observe more completely the condition of the leafless branches, and determine where nature is being too sharply turned or forced from her natural tendency. Where there is a mere bunch of twigs starting instead of a good number of branches, remove part of them. This is always a

possible mischief when we crowd a tree down to bush growth.

*(10) Cultivation.*—Do not plow close to a hedge, with the idea of benefiting it. Nearly all plants that make good hedges do so largely because they make a great mass of surface roots, and most of these form a close network of roots. These should not be ripped up by plow or hoe. If you wish a stout hedge you must give it root room. I would not plow within six feet of a well-established hedge. Outside of this line I would keep the ground clear and forbid the hedge getting a grip on it.

It is, however, superfluous to undertake directions minute enough for every conceivable difficulty. I have covered the ground sufficiently to lead the amateur workman out of the way of easily made mistakes. The general direction is, use common sense. You will easily master all the difficulties of horticulture in that way, and in no other. Study the situation and do what you think is wise under the circumstances. You will find hints always ready for you if you are ready to heed them.

*(11) Cost.*—No estimate of cost can be anything more than approximate, as cultivation, seed, cost of plants, cost of labor, will vary everywhere and all the time. Professor Turner some years ago estimated that, while the cheapest wood fence would cost $300 a mile, his four miles of hedging did not altogether cost over $100, which would be $25 a mile. "Here, then, is a clear difference of $275 per mile, or say $1000 in the cost of four miles when first put upon the ground. The annual interest of $1000 would hire a good young man to tend the hedges for

five months in the year. But instead of requiring a hand five months a year, it does not require such help for one month even in the most laborious part of the work, and after the third or fourth year it does not require the half of that." Professor Turner was always an enthusiast, and I quote him only as able to show the rosy side of hedge-growing.

The first cost of a hedge of Osage orange would in most soils be at the present time more than three times the above estimate. Nor is it in the least desirable to underestimate the real cost of hedging, which is not in the outlay for plants and for planting, but is in the subsequent care and pruning. Professor Turner made his estimates with the understanding that his pruning was to be done with a sickle and rapid slashing. The chief trouble seems to be that the hedge will not allow of delays such as the farmer often feels to be imperative. The season of trimming passes by, and the rank growth gets difficult to handle. Then the owner thinks he may as well defer still longer before giving a sharp cut. In a couple of years the hedge is a ferocious, thorny defiance to approach, and the chances are that it will never be reduced to subjection by the owner. Then comes a hard job, and a costly one, of cutting the whole thing down to the ground for a new start. The brush must be burned, and is a bad job to handle. On the whole I think we must let the estimates of Professor Turner stand as fairly good for live fences, but of little value for hedges such as we are now discussing. Henry Shaw's estimate of the cost of a deciduous hedge is from twenty-five to fifty cents a rod. As a matter of fact

our ornamental and semi-ornamental hedges will cost double that.

*(12) Devices.*—The use of wire with hedges is a combination of considerable value under certain conditions. It serves to make an ornamental hedge able to hold back an animal that happens to break loose. I have found it equally useful against interlopers and fruit thieves. The wire may be entirely concealed by skillful interweaving through the branches of the hedge. I have known of such a hedge, when somewhat dilapidated, being used as a background or trellis for climbing roses. These almost entirely covered the original hedge and became an object of remarkable beauty.

We are not shut out entirely from devices for wet land. I never saw a willow hedge of much use except where it ran along by wet places. Yet a close grove of willows makes a splendid protection against the northwest. Let such a hedge pass on into the form of a windbreak, and then front it with a row of red bark dogwood, a bush which remarkably enjoys itself in marshy ground. Plant it freely and you will say that of all hedges in winter it is the most beautiful. As the leaves fall in autumn the bark turns a beautiful crimson, and retains a warm glow throughout the winter. Nothing in the shrubbery equals it for contrast with the unbroken white of the snow. A single bush will grow only to a hight of ten feet, and fifteen feet in diameter. It does not, therefore, need any severe cutting or pruning. For a moist swale it is just the thing, but it will grow finely on a dry knoll, only much more slowly, and not to above half the size.

Either have a good hedge, or none at all. A poor hedge is unsightly and a nuisance. If by the roadside, and untrimmed or poorly trimmed, it scratches the pedestrian who passes by, and in wet weather it brushes him with its wet branches. If bordering a drive it disgraces the owner instead of honoring him. If I were to sum up this section, I should say that, under ordinary conditions, I should prefer the buckthorn for the general purposes which I have indicated, and as likely to endure all the provocations likely to be inflicted upon it by carelessness and negligence.

*Note 1.*—It may be necessary to add a note on winter injury to hedges. This will rarely if ever occur where the wood has not been weakened by too late or improper trimming. A very thorough report on hedges injured during the winter of 1898 says: "The neglected hedges, that is, those having one year's growth or more on the old stalks, came out universally alive. On a new purchase of 240 acres I had some three miles of untrimmed hedge, a considerable part of which had been neglected for some years. We trimmed about 100 rods in January, just before the noted cold spell; this was badly injured. The remainder was trimmed after March 1st, and made a fine new growth. Ninety per cent of our hedges throughout this section are dead, and this much is certain, that the hedge not trimmed during the winter or just previous to the winter is all right." From personal observation I am satisfied that winter-killing may be in all cases traced to enfeeblement of the plants by improper trimming.

*Note 2.*—Kerosene emulsion, for spraying

hedges infested with lice, should always be kept on hand. It is made by dissolving one pound of hard soap in one gallon of hot water; to this add three gallons of kerosene. Churn together with a force pump for ten minutes, or until the materials are thoroughly assimilated into a mass, semi-fluid, and much like the best soft soap. Store this for usage, and it will keep for several weeks or months. When needed, use about one pint to a pail of water. If this solution does not prove strong enough to kill the lice, double the quantity of the emulsion. Let the spray be applied as soon as the lice appear, and so thoroughly, that the undersides of the leaves will be well wetted. Use the McGowan nozzle, adjusted to any good spraying pump.

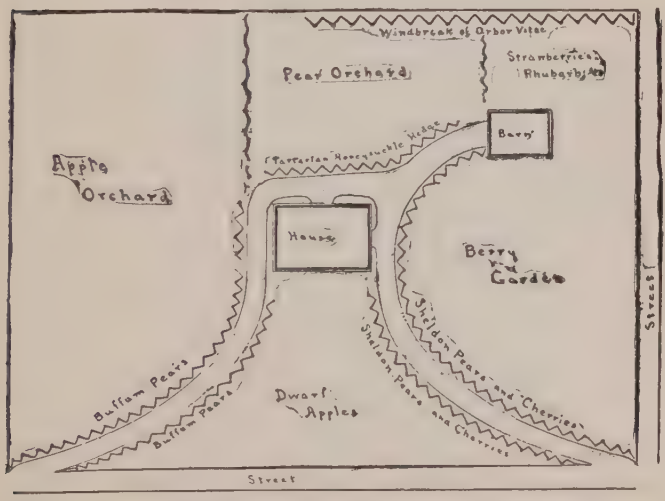



FIG. 4. GROUND PLAN OF SUBURBAN HOME, WITH FRUIT GARDEN.

## CHAPTER III.

### HEDGES FOR SMALL LAWNS, OR FOR DIVIDING LAWNS; AND WITHOUT SPECIAL REGARD TO UTILITY.

The distinction which I here draw between hedges strictly ornamental and those which are both ornamental and useful, is one that cannot be strictly carried out, for every hedge is useful and every hedge ought to be ornamental. Yet there is a distinction which owners of landscape gardens thoroughly appreciate.

### SECTION I—MATERIAL.

In the line of deciduous ornamental hedges I do not believe that anything can surpass the Tartarian honeysuckles. These occur in several shades of color, and are somewhat varied in vigor of growth. The pink-flowering is the most robust, sending up strong shoots with great rapidity, and when these are injured, renewing them quickly. The red-flowering is very handsome, and hardly inferior to the pink for hedging. The white-flowering is several degrees feebler in shoots, and it is less vigorous every way. Whichever color is selected, if you wish for an even growing hedge, do not select but one color. In May the flowering is astonishingly profuse, filling the whole air with sweetness. I should like to know where one can find a more charming sight than such a hedge in full bloom, unless it be the same hedge

when loaded with berries in July and August. These are of different shades of color, according to the color of the flowers. The pink-flowering produces a fine carmine berry. Of the value of these berries as bird food I shall speak in another place.

The lilac has some value as a hedge plant, but easily grows ugly with age, while the intense suckering tendency of the plant decreases the blossoming power of the bushes. The Persian lilacs will do much the best, provided you have room for them; but a good Persian lilac hedge will require from ten to fifteen feet in diameter. The show of flowers will be inconceivably beautiful during May, and after that the bushes are dense enough to make a very good windbreak. Set the bushes eight or ten feet apart, or if you prefer, set them five feet apart, and later remove every other bush. At the best the inside branches of any lilac will die out every year, and must be carefully removed. Josikæa and Charles X are later-blooming varieties, with stout trunks, and can be used in the hedge form. Some of the more recently developed varieties are far better, but at present somewhat costly. I have seen the common white lilac used as a hedge, but with nothing to recommend it, except that it served as a windbreak, and would turn a stray animal.

The Weigelas are among the prettiest plants for hedge rows, but more particularly the variegated-leaved sort. This is one of the handsomest of all shrubs, as its variegation is clear and bright and lasting. It is not in the least sickly in hue, like many variegations. It has a drooping but compact form, and in florescence is a marvel of beauty. As it is

low-growing, I should like it best for a border for beds of flowers, or for a winding drive. It rarely exceeds four feet in hight, and can be cut to some extent. You will especially like it fronted with a line of *Deutzia gracilis*. This latter plant will lift itself about one foot in hight, and adjust its method of growth very closely to that of Weigela.

Almost any of our best known shrubs make ornamental lines when needed to divide gardens or to outline fields; not so many of them are suitable for bordering drives. It is not a bad plan to grow morning glories at the foot of such hedges, and so secure a fine autumn blossoming, since most of the shrubs blossom in April, May or June. But we have two exceedingly fine shrubs blossoming in August and September, that can be used with admirable effect, the *Hydrangea paniculata grandiflora*, and the althea, sometimes called Rose of Sharon. The former will stand about six to ten feet in hight, and show a complete mass of magnificent heads of flowers. This bush will endure considerable cutting, and on the whole should rank, I think, close after Tartarian honeysuckle for a strictly ornamental hedge. The altheas are of as different styles of growth as they are of different colors of bloom. It is necessary to select those which grow alike, if one desires any uniformity in hedge growth; and it is better in most cases to select the erect growing than the spreading. Many of the altheas, perhaps all of them, will need protection for the first two years from seed, and after that they will be found to be entirely hardy as far north as New York. Most of the varieties are hardy as far north as Albany. One

variety on my lawns I find objectionable, owing to its brittle wood. Still, on the whole, with a little extra care, long lines of altheas can hardly be surpassed for beauty during the autumn months.

I have already spoken of the beauty of the red-barked dogwood as a hedge in winter. To enliven the landscape and take the chill from the winter months there is nothing quite so good. The color becomes a deep crimson in November, and remains a brilliant sight for the eye until the leaves put forth in spring. It has only one rival, the barberry. Although the barberry has often been used for hedges, it has one fatal defect, its branches are constantly reaching over out of place, and breaking with readiness. The wood is very brittle, so that it is difficult to keep anything like symmetry of outline. I should prefer the barberry in individual plants. If used in line, I should set the plants several feet apart and retain the branches in place with a strong wire around each plant.

Mr. S. B. Parsons of Flushing has, for a long time, urged the value of the purple beeches for hedges. Some years ago C. H. Miller of Philadelphia called attention to the fact that seedlings of this tree came with purple foliage, and were hardier than the parent. There is a good deal of variation in the color, but I think he is right about their hardiness. The ordinary purple beech is not hardy. The variety called Rivers is absolutely frost proof. It is one of the grandest trees in existence for a shelter. If you desire a short hedge or a hedge to close in a warm nook, the purple beech will serve you admirably. It does not easily

yield ground to a crowding neighbor, nor does it die out in spots.

Those who desire to form an ornamental trellis will find nothing to surpass the sweet honeysuckle *(Loniccra Canadensis)* and other varieties of constant blooming honeysuckles. They should be grown to a stout wire trellis, and kept well fed. A pretty effect is made by growing alternately the sweet and the trumpet honeysuckles. The latter variety, however, is much the more rapid and robust in growth, and likes to climb as high as twenty-five feet. It needs close cutting, while both varieties require considerable compulsion to correct a wild straggling style of growth. The fragrance of the honeysuckle, if it does not surpass all other vines, is at least unexcelled. It is possible on such trellises to combine with the honeysuckle the large-flowering clematis. The tall climbing varieties are more suitable for balconies or rockeries.

The Southern states have the advantage of being able to use for hedges those roses which are too tender to grow perfectly in the Northern states. They can also make grand hedges of the Chinese privet, and of Cape Jasmine, and the Japan Euonymus. But imagine a hedge or a windbreak of the broad-leaved evergreens! At the North, however, we may grow many varieties of roses with enough effect to be highly gratifying. I have seen hedges of General Jacqueminot, Caroline de Sansal, John Hopper, and other hybrid-perpetuals which were certainly marvels of beauty during the blossoming season. But, alas, our tea roses are too tender to become sufficiently large plants for effective hedges. I shall

hardly venture upon a special section on roses, because the constant development of new varieties makes it desirable that the rose grower shall seek the information of experts. However, we may be sure that the Soupert roses are among the best at present for hedge growth, and that the Ramblers cannot be excelled during their period of blossoming. The new Rugosa roses are exceedingly attractive because of their luxuriant, glossy green foliage. Several of our perpetuals are very nearly ever-blooming. In using them for a hedge let every fifth plant be one of the climbing ever-bloomers, and be trained sideways on wires over the tops of the other bushes.

Meehan tells us that he has seen the tea plant grown as a garden hedge in the Southern states. The nearest approach at the North is a border of sage, which really is very pretty in bloom and can be neatly clipped. Too much emphasis cannot be easily placed on the multiplication of sweet odors about our homes. They are associated with ozone, and therefore with health. I recommend the use of the wild grapes, but these are more directly associated with windbreaks, and will be spoken of farther on. From the flower bed edges to the walls of tropeolums and sweet peas, flower hedges are pretty enough to add to our pleasure, and they are so inexpensive as to be everybody's luxury.

The tropeolum or nasturtium is the poor man's flower. It belonged to our fathers and mothers as a pickle producer and border plant; and to this day it remains par excellence the sweetest, healthiest and most floriferous annual in our whole list. It likes

poor soil, with a plenty of water, and makes a trellis that never gets tired of blooming. It is a peculiarly wholesome flower, fit for the sick room as well as the dining room. When you want an annual screen or hedge of flowers, there is not one of them all to surpass it. The sweet pea is its only rival, but the sweet pea exhausts itself in half the season, and it requires extra good soil and constant attention to keep a fine screen. The tropeolum runs irregularly, freely, and with a sort of flowery abandon.

Morning-glories are perhaps our next best screen maker, and for a porch or tall screen, our best. They blossom profusely all summer, provided only that you will keep the seed picked off. Better still it is to sow a second drill of seed outside the other later in the spring. I am accustomed to let morning glories sow themselves along a board and wire fence. They grow all over it and cover it with a luxuriant glory in August, September and October. You can use either of these flowers to climb up any wall or fence that needs decorating.

## SECTION II—TREATMENT.

Ornamental hedges depend for their beauty on more or less neglect. That is, if made of bushes, they must be allowed to follow natural outlines with considerable irregularity. The Tartarian honeysuckle is, however, specially excellent for keeping a good form and enduring pruning. You may lop off branches that overreach or you may cut a whole side back without materially damaging the hedge. Indeed, I cannot say too much for this admirable

shrub. It is very close-growing, and makes new shoots so quickly that a clipping does not long remain unpleasantly formal. In general that which we wish of an ordinary hedge we do not wish of a hedge planted only for ornament; that is, we do not require exact lines and precision of growth. But where approximate accuracy and formality are needed, the Tartarian honeysuckle is, above all others, the plant that you need.

Hedge growers, while learning to abhor the monstrous and misplaced, may make hedge-growing contribute to the general beauty of the place by such contrivances as living arbors, bowered seats, and arched walks. One of my living arbors, slightly separated however, from the hedge rows, lifts its peaks about twenty-five feet high, and inside is a cool shaded enclosure of eighteen feet diameter. Originally intended to be a place to conceal a refuse pile, I have found it more useful to use the enclosure as a retreat. With seats and a hammock it becomes delightful. The roots of the arbor-vitæ create a dry mat inside like the floor of evergreen woods. If left to arch over a pathway, your hedges may easily give a cool, arbor-like pathway. One of my own leads to an enclosure, where is found a well, useful for watering the grounds. Over the well is trained an arbor of grapes. Hedges for screens are of great importance. This is not to cover the disagreeable, but to secure quiet nooks, places for hotbeds, and enclosures for wells and reservoirs. These, as a rule, are not what we can blend pleasantly into general lawn work However, our wells may be so constructed with rock work as to be highly ornamental.

A screen can be advantageously used to cover the work that creates litter, work that must at all seasons be going on. However, be careful about carrying this system to excess. A lot of petty screens or bits of hedges do not create the beautiful; they suggest children's playgrounds. I have in mind an elaborate set of lawns which err in this direction, so as to create a sensation of pettiness.

The removal of hedges and hedge fences from the highways is a reform that follows close after the removal of board fences. The removal of cattle from the streets leaves no object whatever for the street fence, alive or dead, except that of seclusiveness. This is conjoined in public sentiment with exclusiveness, and rightfully it is resented. But for other reasons these obstructions should never be placed along the street. They make the highway something foreign to the owners of adjacent land. Less interest is taken in road improvement than if ownership were felt, and assumed, to the center of the street, or at least to the driveway. I advise all landscapists and owners of pleasant residences to sweep away these things entirely, and let each person feel that he owns and is responsible for the cleanliness and beauty of the highway. The roadway is rightfully a part of those homesteads through which it runs. It is only in a narrow sense a public affair, to be temporarily used by the passer-by; while it is eminently private. The whole highway should be a continuous garden. If hedges appear adjoining it, or as a part of it, they should not be on a straight fence line. It is much better to plant our lawns clear to the ditches. That is, let your shrubbery which

has heretofore extended to the fence line, occupy also the street line to the ditch. Then the driveway, which alone has public ownership, will pass through continuous shrubbery.

In some instances I find fruit trees along the highway. This is peculiarly the opposite of the use of hedges, for instead of fencing people out it invites them to participate with us. It is hospitable; but I have not observed that such trees are largely meddled with by pedestrians. I find the grouping of evergreens down to the roadway is very agreeable. In New Jersey towns and a few New York towns I have seen the choicer shrubs in full bloom within reach of the hands of passers-by. The lilac reaches to you its perfume and the cherry tree its fruit in the suburbs and main streets of Ithaca. This is delightful; and why not? It is vastly more human than cultivating your fine things behind stone walls or board fences or hedges. Flower beds in the street are better than cows and swine. I think it will be the idea of the twentieth century. We shall probably see by the end of twenty-five more years all of our ugly, weed-bedraggled highways turned into a public garden, reaching everywhere; and binding all homes together with bands of beauty and of good will.

I have not undertaken to suggest all the appropriate uses of shrubs and other hedge plants about our homes. It is enough to say that no one should undertake the establishment of a beautiful home until he has first made a thorough and personal study of his land, and so become identified with it that he will comprehend its best use and its possibilities for

developing the beautiful. It is not enough that one shall employ a landscape artist, to get the highest good from this home-creating. A home should be the growth of a man's soul into house and land. If you follow out this idea you will soon discover where a strictly ornamental hedge will assist you in making your home more home-like, and where a hedge, partly for utility, will best accomplish the ends which you seek.

If a hedge has gone wild for a few years, the question arises, what can be done with it. If the hedge be deciduous the problem is not so generally one that cannot be answered. Cut it down nearly or quite to the ground, as your first step toward improvement. Then inaugurate a system of careful trimming, not too severe; but let the rapid growth have considerable free play. Give the plants one or two feet of new development the first year. Or if the hedge has been neglected for only a year or two, you may cut it down to two or three feet in hight, carefully shaping the hedge as you cut it. Deciduous hedges have always this advantage that they can be built up again after neglect, whereas you cannot do anything of the sort with evergreen hedges. I shall refer to this topic again in connection with evergreens, but may as well say here that if an old evergreen hedge has gaps that you wish to fill up, this may be accomplished with no difficulty if you will have patience; whereas, if the hedge is badly killed in places and thoroughly out of shape, cutting back will do no good; it must be destroyed.

## CHAPTER IV.

### EVERGREENS FOR HEDGES.

Notwitstanding the enthusiasm we may genuinely feel for deciduous hedges, and the delight we get from the shelters of sweet flowering shrubs, the longer a man cultivates gardens and garden homes, the more he will find himself convinced that no deciduous bush or tree of any sort makes as good a hedge for ornamental grounds, or so good a protection against winds, as an evergreen. The latter creates a wall unchanged by the season. When the day is bitter outside, the moment I step into my drives between my arbor-vitæ hedges the climate becomes comfortable. Here, behind and between these walls, I can grow shrubs and fruits that cannot be grown across the street, where the wind and weather have their way. Even in November or in March I can find a cozy corner in a curve of arbor-vitæ. My Concords and even my Isabellas are given a chance to ripen. Under the lee of protecting hedges, December not seldom gives me a dandelion. Better yet, the birds know all about it; robins linger in the lap of winter and do not find it so bad to tarry with us. But best of all is it to be able to look out the dreariest and bleakest days of midwinter and rest my eyes on greenery as fresh as May or October. My own evergreen hedges and

(50) FIG. 5. HEMLOCK HEDGE ABOUT SUBURBAN HOME.

windbreaks, if extended in a continuous line, would cover over half a mile; nor do I wish to part with a single rod of them.

## SECTION I—MATERIAL.

The handsomest of all evergreen hedges is made of our native hemlock spruce. The foliage is fine and hangs with peculiar grace. Another advantage is that the color does not change during the winter months. Arbor-vitæ becomes a russet brown, very beautiful, but hemlock is as green in January as in June. A hemlock hedge is, however, more easily spoiled by wrong trimming or neglect, and I cannot therefore recommend it for general planting, as fully equal to the arbor-vitæ. By all means, try it for small enclosures, especially near the house, or to protect roses and delicate shrubbery. The Norway spruce makes an admirable hedge, but needs severe pruning, and is almost certain to get out of control or become unsightly after a few years. Nearly all that I have seen planted I have also seen dug out. The junipers can be more safely used, especially red cedar. Its special value is, however, to create shelter. It will readily make a wall from twenty to thirty feet high, and as such its value will be appreciated in keen wild weather. It is thoroughly hardy and the growth is quite rapid. The low-growing junipers make pleasant but irregular hedges, while the savin is important mainly to grow along the foot of high windbreaks, or to be associated with a rockery.

Very similar in growth to the savin is our native evergreen bush, the mahonia. This is the

handsomest shrub in existence when well grown, with its glossy holly-like leaves that are red when young, and its flowers that appear in May as huge balls of gold. A line of these makes a magnificent sight early in spring. The mahonia is, however, slightly tender in northern latitudes. I find it essential to cover my bushes with a sprinkle of leaves, held on with branches of evergreen or with brush. In the northeast angle of a building, where the winter sun cannot reach it freely, it shows no winter-killing.

I have referred to the common hemlock *(Abies Canadensis)*, but there are many other varieties of hemlock which may be used to vary landscape work. For low hedges and borders, Parsons' Dwarf is excellent. It must also be borne in mind that the hemlock, unlike most evergreens, is very much given to sporting. You will find so great variation in the growth, even in the same opening, as to almost constitute varieties. I have been able to select those which were very drooping in their foliage, and others nearly as stiff and formal in growth as the arbor-vitæ. It must always be borne in mind that the hemlock loves moist soil, and that it does not take with any liking to pine lands or any other soils that are light and sandy. Yet it will thrive on high knolls, provided it be well mulched. I have seldom lost a bush by removing it from a swampy ground, unless from neglect of immediate mulching.

I have ranked as next to hemlock, and in some respects superior to it, the arbor-vitæ. I think that, as generally treated, it is preferable for long hedges. It is stiffer and stouter in growth, and will better endure a degree of neglect. I do not mean,

(53) FIG. 6. ARBOR-VITAE HEDGE LEADING TO COUNTRY COTTAGE.

however, to imply that any hedge of any sort will be worth having after a protracted season of shifting for itself. The arbor-vitæ grows dense and stout lower branches, and I have left a fine hedge (during a season of illness) untrimmed for one full year.

Bear in mind that the arbor-vitæ is capable of adjusting itself to a wide range of climate, and for growth, hardiness and readiness to take the shears, is also useful. I think it is found over as wide a range of our Northern states as any evergreen that we have. While fond of wet lands, it adapts itself quite as well to dry soils, and I have it successfully growing on knolls, ridges, and along the faces of cliffs. The hemlock, after the spring trimming, sends out a drooping growth which at the tip is almost equal to florescence. It is best suited for low hedges, and the arbor-vitae for taller ones.

Select as a rule the evergreen that is native to your section. You will best understand its growth, and can secure the soil it desires. Do not think that because the tree is native it is less desirable in cultivated grounds. The finest ornamental lawns in America, including their hedges, have a preponderance of shrubs and trees selected from adjacent wild land. You will find a veritable revelation when once you have set yourself to a study of your vegetable neighbors. You will also find that you can have for the digging some of nature's finest treasures.

I have not attempted anything like a full list of evergreens suitable for hedges and similar work. Indeed, very few are unsuited to this purpose. Among the best are the following, with golden foliage:

(1) The Golden arbor-vitæ. This is a beautiful variety of Chinese origin, with a bright yellowish-green foliage. I have not found it entirely hardy in central New York, but nearly so. Its growth is compact and round.

(2) Two other small-growing varieties of arbor-vitæ with golden foliage are the Hovey and the George Peabody. These are capital little trees for low-growing and compact screens or hedges.

(3) Among the Retinosporas are two exceedingly beautiful bushes or small trees, with rich golden color and foliage of a plume sort. These are very graceful, the *R. plumosa aurea* and the *gracilis aurea*. I do not know anything more pretty or graceful.

(4) Among upright growing evergreens we have a number that are exceedingly well adapted to hedges and hedge-like growth. The pyramidalis arbor-vitæ resembles the Irish juniper when seen at a distance, but is useful where that is not and is more hardy. The foliage is a rich, deep green; a color which it retains all winter. This tree is not made near as much use of as it should be. Indeed, our fine lawns rarely have a proportionate number of pyramidal or erect-growing trees.

(5) The Swedish juniper, the Irish juniper and the Neoboriensis constitute three exceedingly fine erect-growing evergreens suitable for hedges. The Irish is perhaps the finest in growth, making a splendid column ten to fifteen feet high. Of the red cedar I have already spoken.

(6) Of dwarf-growing plants nothing could be finer than the Tom Thumb arbor-vitæ. Much like

it is the heath-leaved arbor-vitæ, and the pumila. All of these are natural dwarfs. They will make a hedge from one to three feet high.

(7) The *Retinospora squarrosa* is another very graceful and very beautiful small-growing evergreen, with glaucous green foliage.

(8) At the South may be planted to great advantage the Irish yew, the English yew and other varieties of the evergreen. The Variegata is edged with golden yellow. These cannot be recommended for the North as perfectly hardy. The yew is popular in England because it can be so easily sheared. It grows with very dense foliage.

(9) Among the large strong-growing evergreens the Austrian pine and the Scotch pine make two of our very best for screens, but not the best for close hedges.

(10) But whatever else we overlook we must not forget the Siberian arbor-vitæ. This variety is very much like the American, except that its foliage is heavier and grows cultriform, that is, perpendicular instead of horizontal. It bears trimming perfectly and can be kept in as good shape as our native arbor-vitæ.

(11) The Balsam fir I mention not to recommend it, but simply to warn all hedge growers from undertaking the use of it. It is the most disappointing of all our evergreens for every purpose whatever. Exceedingly beautiful when young, it begins to die out at the base very early, and as it becomes a tree it becomes scraggy and unsightly. It also has the exceedingly bad fault of breaking down easily in high winds.

Our Southern states have a few other evergreens adapted to hedges, such as *Ilex cassine*, a species of holly. The leaves are described as small and much like that of the arbutus. The berries are large and brilliant red—not liked by birds, and therefore persistent throughout the winter. The rhododendrons are peculiarly beautiful for hedges, where they are hardy, as are also the low-growing laurels or kalmias. However, they will not thrive in limestone soils sufficiently well to be of any use for hedge work. By using made soil, and by persistent attention, individual shrubs may be grown, and short hedges. If you try them at all, get good garden soil without the least admixture of manure, add sand and wood mold, and take care to mulch in the winter.

The Box deserves special notice. The low-growing bushy variety is admirable in garden work, bordering beds and walks. The larger growing makes an admirable low hedge. It endures cutting as well as the holly, and is responsible for no end of fancies and abnormal shapings called art. In English and French gardens during the last century, houses of box were not uncommon. Topiary work is, however, no longer as fashionable in English gardens or even in French. In this country it has never secured any serious attention from our better home-builders. As our own lives grow natural and democratic, the conventional in art becomes distasteful.

It is no small advantage to have near our homes such plants as can be cut for winter house decoration. The savin is admirable for this purpose. The mahonia is perhaps best of all; for although the

leaves may be beneath the snow, they have lost none of their rich summer brightness. Below the line of New York, *Magnolia glauca* serves a similar purpose, while farther south it becomes so entirely hardy that it may be used for windbreaks with remarkable effect. The leaves are large and glaucous, occasionally acting as deciduous. The flowers are exceedingly sweet as well as beautiful. Other magnolias are very valuable for hedges, especially *conspicua* and *Soulangeana*. Indeed, all of the Chinese varieties may be made useful for hedge work. Few of them are evergreen, but I name them here as associated with the *glauca*. The holly is a favorite in Europe as well as in our Southern states. It will thrive perfectly as far north as New Jersey and New York city. Its historical and poetical associations place it quite as high as its real beauty. It bears winter clipping as well as the mahonia. For this reason it has had its grotesque and fantastic shearing. Fortunately no one any longer cares for monstrosities in landscape, and we shall probably never again have a reign of vegetable griffins, roosters and dogs. There are holly hedges in existence known to be over two hundred years old. This is one of the hedge plants that thrives best in sandy soil. It grows very slowly, but will at the last, if untrimmed, reach a hight of twenty-five feet.

### SECTION II.—TREATMENT.

*(a)* The time for planting evergreens is identical with the time for planting deciduous trees. The old notion that it was advisable to plant them

in August is entirely given up. It resulted in a loss of a large proportion of all that were planted. Why the hobby ever found so general acceptance is difficult of explanation. Set your plants early in April, and plant them precisely as you do deciduous trees —only with extra precautions. When I say April I mean for the sections of country running from Boston westward.

*(b)* Before digging your trees, have your trenches dug for planting them. These should be of ample width, probably three feet will never be too wide for the trench, and two feet in depth. Let the bottom be filled with loose earth and then puddled, that is, thoroughly soaked with water. When setting, wet down the roots constantly, and thoroughly puddle each tree as it is planted. This is the important point with evergreens, that they be thoroughly puddled. It is, however, equally important that the plants be handled right in digging. The roots of an evergreen should never be exposed to the sun, or the wind, or allowed to get dry. Wrap the roots as soon as out of the ground with wet straw or matting or old cloth. Keep these well wetted until you reach your planting ground. Then, if not to be immediately put into the soil, puddle the roots by thrusting them into a tank or pond or brook. Keep them here until you are ready to plant them, drawing them out one by one. It is necessary to add that if the soil be exceedingly solid and retentive, drainage should be prepared beforehand. This may be accomplished by tile drains or a series of tile drains. If the hedge be a straight one, I should be inclined to run a drain parallel, and within a few feet through

the whole length. If the trench dug for setting your plants be a little deeper than needed for the plants, and the bottom filled with rubble stone, this will suffice, unless the soil is low.

*(c)* As soon as planted and thoroughly soaked to the surface, let your hedge be mulched. This must never be overlooked or delayed. Use sawdust if convenient, or coal ashes, if more convenient,—always those of anthracite coal. Bear in mind that manure from the barnyard, and the commercial fertilizers, have nothing to do with the soil in which you place evergreens. If you wish to destroy your hedge impromptu, use barnyard manure.

*(d)* If the hedge plants were not cut back before setting, let it be done at once, and let it be done very severely. Bring all the plants into as nearly the same size as possible. The only rule to be given is to remove from one-third to two-thirds of the wood, including all the long straggling and irregular branches. The permanent shaping of the hedge will require a watchful eye and careful hand for not less than four or five years. Meanwhile the hedge will have a somewhat open look, not altogether beautiful, but closing up steadily into a solid wall.

This shaping is the key to all your success or failure. You cannot compel evergreens to continue healthy if you insist on artificial forms of growth. Whatever kind you are planting, study first its natural method of growth and outlines as the trees stand wild. Then follow very nearly these same outlines as you train the bushes into a hedge. The arbor-vitæ should rise, on an easy slope from the ground, to near what you intend shall be the top of

the hedge: after reaching that point there should be an easy roll over the top to the other side. This top should never be sharp cut nor flat, nor should it be very broad from the sides. For some reason that I am unable to explain, the hemlock does not, when rounded from near the bottom, refuse to grow as well as when it takes the somewhat conical form of the wild tree. This roll of the hedge is not exactly what we might term the natural form of the hemlock tree, nevertheless, I have found it desirable, and entirely practicable to grow my hemlock hedges much more rolling from the bottom on the one side to the bottom on the other than my arbor-vitæ hedges. I have never had a gap in either of these hedges due to winter-killing, or in any way traceable to the trimming. You will find it possible, probably, on this style of trimming to get a fairly compact hedge by the end of the fourth year. The hemlock should improve in form and compactness for ten years longer. With careful handling it should retain its completeness and beauty for forty or fifty years more.

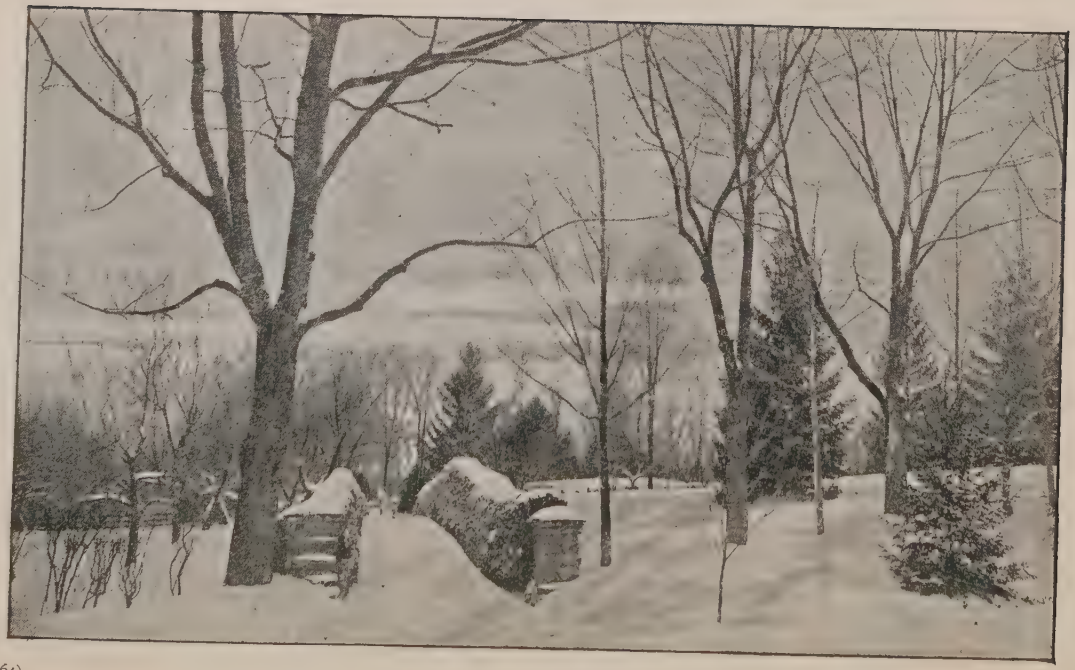
If trees grow near by, or shrubbery crowds against an evergreen hedge, there will surely be dead branches rapidly formed on the side encroached upon. Sometimes this may be endurable, where it occurs on the back side of the hedge, and you do not care to sacrifice a very choice shrub. Where I have found it necessary or desirable to fill up such gaps in arbor-vitæ hedges, I have found it much more practicable to fill with hemlock than with arbor-vitæ. Take small plants of not more than one foot in hight, set them carefully, and be patient. This fusion of two

species of evergreens is not always undesirable. The arbor-vitæ and hemlock work specially well together. It must be borne in mind that evergreen will not grow with equal thrift in sun and in shade, or when half shaded. These inequalities can be partially remedied by careful trimming. I have been able to run my arbor-vitæ hedges for over a quarter of a mile over the ground, and so adjust them to the grade that they do not give to the eye an unpleasant lack of either symmetry or uniformity. I know that they are not of equal hight or equal fullness, but I know that my shears have made them appear to be such.

Evergreen hedges are ruined more often by errors in trimming than by all other causes combined. The following rules, if followed carefully, will be sure to keep any well-grown hedge in good condition for thirty or forty years, probably longer: (1) Trim only once a year, and always before new growth appears, in the latter part of April or early in May. That is, if the spring be warm, cut in March, if not, in April. Never cut in midwinter, for the tips that you cut away are intended by nature as a protection for the buds which will make next summer's growth. If cut away, the probabilities are that cold days and severe frosts will either kill back the hedge in spots, or nip the buds enough to spoil the beauty of the coming growth. Remember that a hemlock hedge is beautiful not simply for its shape, but for the exquisite blossoming of its fresh growth. Nor should you ever cut in autumn, and that for the same reason, that you would be cutting away the cloak that nature has prepared for the hedge during the coming winter. If you do cut in autumn you will

almost certainly be inquiring of some one, in the spring, why some of your hedges are killed altogether and others show dead bushes. A gentleman of my acquaintance who owned very fine hemlock hedges insisted on keeping them clipped throughout the season. The result is that he now has so wretched a hedge and so unsightly that what he has not already dug out will soon be removed. I bear strong emphasis on this point, because so many people who seek to have beautiful homes have a passion for eternally clipping something. Their hedges must be sheared; the lawn must be equally sheared. To them growth is never beautiful—only smoothness.

(2) When you trim, cut close to the wood of the previous year, but never so close that you do not leave a small portion of wood with leaves on it, for here are the only buds for new growth. Evergreens, unlike deciduous trees, have no dormant buds on old wood that can be developed. If you cut away the leaves, or needles as we should call them, entirely, then you have killed the hedge, or whatever part of the hedge you have so cut. This mischief also occurs from the employment of professional trimmers—that is, of a class of men who do not understand anything beyond the formalities of cutting. They seldom comprehend the nature of the growth, and are intent only on keeping the outlines of the wood. You must bear in mind that they will charge the damage to the severity of the winter, or to the heat of the summer, or to some other cause which will not stand investigation; they will not be themselves responsible. The evergreens I have indicated as hardy do not winter-kill, nor do they burn out in



(64)

FIG. 7. ENTRANCE TO SUBURBAN HOME OF TWELVE ACRES.

summer *if properly trimmed*. (3) Have as little of last year's growth as possible left by the shears, because if a hedge gains only one inch on each side each year, it will in twenty years have gained forty inches or considerably over three feet. In many places this spread of the hedge will not be endurable. It will encroach too much on your drive or on your lawn. (4) There is great danger that your trimmer, using long shears, will bear his weight a little more heavily as he reaches higher up, and so will valley in a hedge. Insist on it that the contour I have previously described be kept without infringement. If not, your hedge will begin to decay. (5) Do not allow the lower branches to be shortened in with those that lie just above. They must reach out so as to form, from the very ground, a slight inclination all the way up, and leave a solid base for the hedge. If possible these lower branches should lie flat on the ground. (6) If your hedge runs east and west, or nearly so, the north side will be in danger from close pruning. It must have light and air.

A few things must be borne in mind in the care of evergreen hedges apart from the pruning: (1) That they must not be touched roughly when hard frozen. The branches are then as brittle as glass and will break sharp off, leaving rents and breaches. It is clear, therefore, that careless drivers must not be tolerated among your drives that are bordered with this class of hedges. If the hedge is loaded with snow that needs to be removed, let it be done if possible when the branches are not frozen. (2) Urine kills a hedge, and dogs become a nuisance.

If you keep a dog at all, a collie is the safest, and a spayed female the best of all. I hardly need add that you must keep sharp watch lest about the roots of your hedge be poured brine or any other salty material. (3) You must not leave the heavy snows of winter to do as they will with your hedges. If a heavy snow falls on them, let it be loosened up and tossed off by the use of a rake or a pitchfork or with a long pole. I sometimes use a tool made of a bit of board firmly fastened to the end of a pole.

It will of course be asked (1) How long will it take to establish a perfect evergreen hedge? All depends on the common sense and care that it receives. An evergreen hedge should look very well, as I have before said, by the third year. It should be in splendid form by the fifth year. (2) How long will an evergreen hedge last? I have hedges of arbor-vitæ thirty-five years old, which my friend, Professor Bailey, says are the finest between the Atlantic and the Pacific. My hemlock hedges of the same age are as fresh and as perfect as at ten years of age.

One of the most important subjects is, where *not* to have an evergreen hedge. I do not know that it is possible to give any directions, excepting that you study your ground carefully before planting. A hedge, a screen, or a windbreak may be so placed as to throw the drift of snow directly into your drives, or they may be so planted as to divert such lines of drift. This can be accomplished only, as I said, by a previous and careful study of your grounds and the tendency to drifting. Other suggestions I prefer to make in the form of sketches.

*Note.*—I do not know of anyone in America better qualified to speak on evergreens than Samuel Parsons, Jr. I think so highly of a brief essay from his pen on Japanese evergreens that I shall close this section by copying the same. While it is not strictly a discussion of hedges, it will give precisely that information which will be sought for by those who desire to experiment with some of the more rare and beautiful of these trees. "*Abies polita,* the tiger-tail spruce, is one of the finest and most valuable of the Japanese conifers. It is rich and very characteristic in form. The yellow-barked branches extend out stiff and straight, and the glossy, bright green, stiff-pointed leaves are as sharp and not unlike the spines of a hedgehog. The curious appearance of the ends of the young growth or half bursting leaf buds doubtless suggested the name, tiger-tail spruce. *Abies polita* grows slowly and, therefore, belongs to the class of evergreens specially fitted for small places. But this little cluster of evergreens close by is even better fitted for such work. They are Japanese junipers, and very hardy. Their elegant forms and rich tints would indeed render them distinguished anywhere. One is silvery, at least on a portion of its leaves; another is almost solid gold, and another *(Juniperus aurea variegata)* has its leaves simply tipped with gold in the daintiest fashion imaginable.

"Let us look at these two Japanese pines that show so richly, even at a little distance. One is *Pinus densiflora,* with bright green leaves, long and very effective. This tree grows very rapidly, soon requiring the application of the pruning knife. In

coloring and general habit it is perhaps the best of Japanese pines, except *Pinus Massoniana*, which only surpasses it in a yellowish tint that generally pervades the leaves. But the *Pinus Massoniana* par excellence is the golden-leaved form of that species. It is bright gold that seems to gain a touch of deeper gold as you pause to look at it. This peculiar effect is greatly enhanced by the fact that *Pinus Massoniana* has two leaves only in a sheath, and these leaves are so clustered on the end of the branches as to spread in every direction. It was this peculiarity that gave rise to the name, sun-ray pine. But the noteworthy habit of this pine is its late variegation. In June, while in full growth, it is rather greenish-golden than golden; but all through the summer its yellow grows brighter, until in September it makes a very striking object amid the fading leaves of fall. It makes, in fact, a worthy companion for the golden oak *(Quercus Concordia)*, which you will remember has the same peculiarity. It should be also noted that the brightness of the sun-ray pine remains uninjured during winter, and never burns in summer, a quality that other so-called golden pines have sadly needed. The bright yellow of the sun-ray pine is confined in a peculiar manner to about two-thirds of the leaf. Beginning at the base, first comes gold, then an equal amount of green and then again as much gold at the tip. The dividing lines between these colors are marked out with singular distinctness, thus giving the utmost delicacy and finish to the variegation. *Pinus Massoniana variegata* is on the lawn in question, but it is, nevertheless, very rare and hardly to be obtained anywhere.

"We come now to the Retinosporas (Japan cypresses), choicest, I was about to say, of all evergreens; certainly the choicest, as a class, of all recently introduced evergreens. To Robert Fortune, the great English collector of plants in Japan, we owe probably the real introduction of the leading species of Retinosporas—namely, *R. plumosa aurea*, *R. pisifera* and *R. obtusa*—and a greater benefit could hardly have been done the lawn planter than the introduction of these evergreens. They are hardy, of slow growth and of most varied beauty in individual specimens, the latter being a quality greatly wanting among some evergreens commonly used throughout the country, arbor-vitæs for instance. And, apropos of arbor-vitæs, let me say that the Retinosporas bear a much more close relation to that species than they do to cypresses, notwithstanding the latter has been adopted as the English name. The Retinosporas graft readily on the Thujas or arbor-vitaes and bear a certain resemblance to them, but the resemblance only that can exist between a beautiful plant and one much less attractive. Let us look at a group of the new and rare Retinosporas, although unfortunately all Retinosporas are comparatively rare on our lawns. In asking you to look first at *filicoides*, I am selecting one of the very choicest and most curious green species or varieties. If it were not for a peculiarly thick curled border along the leaf of this Retinospora, it might be readily taken while young for an evergreen fern. It is a spreading plant, of slow growth and great hardiness. Indeed, I might say,

once for all, that the Retinosporas are of unexcelled hardiness, both winter and summer, and that their variegations are all permanent. Can a higher character be given to any other evergreen?

"There are two distinct kinds of weeping Retinosporas—namely, a beautiful fern-like pendulous form of *R. obtusa,* originating in Flushing, and an extravagant, attenuated form, imported recently from Japan through Mr. Thomas Hogg. The long thread-like leaves of this variety fall directly down and curve about the stem in swaying, meager masses, which suggest that in this plant the extreme of the weeping form among evergreens has been reached. Almost as curious as this is another introduction of Mr. Thomas Hogg, *R. filifera aurea.* We have known *R. filifera* for some time as a rare tree with tesselated shaggy masses of green, thread-like foliage, but Mr. Hogg's new variety offers the same strange mass of foliage, only in this case it is turned into gold, broad, solid, permanent gold. While I am pointing out the Golden Retinosporas, which are veritable sunbeams amid other evergreens, let me call your attention to *R. obtusa aurea,* one of the best and most distinct of all variegated forms. It is free-growing, with a beautiful combination of gold color intermixed with glossy rich green, all over the plant. Although not exactly a new plant, I am constrained to call your passing attention to *R. obtusa nana,* one of the very best of dwarf evergreens, a dense flat tuft of glossy, deep green spray, a cushion or ball of evergreen foliage that will hardly grow two feet in ten years. The golden form of *R. obtusa nana* is charming. Its yel-

low is a rich bronze, and I do not know anything of the kind more attractive. *R. pisifera nana variegata* is also very beautiful, a dense miniature bush of a general bluish-gray aspect, except a portion of the lesser branchlets and leaves, which are pale yellow. But do not think I have begun to exhaust the curious forms of these Retinosporas. I have only given the most noteworthy to be found on a superior lawn. Any large group of *R. obtusa* will give a dozen beautiful diverse forms of weeping, pyramidal and dwarf or spreading evergreens. All or practically all kinds of Retinosporas now used came from Japan, where they are common, but highly valued in the beautiful gardens of that country. Mr. Hogg has not only introduced several of these new Retinosporas, but has given us possibly more new Japanese plants than any collector since the time of Robert Fortune's famous horticultural explorations.

"I must not leave these Retinosporas without calling attention again to their excellent adaptation to small places. If we restrict the planting on a small lawn to Japanese maples, Retinosporas and two or three shrubs, like *Spiraea crispifolia,* we may almost defy, with a little skill, the power of time to compass, by means of trees, the destruction of our grass plots. I must add, however, one other conifer to this seemingly short, but really varied, list of new hardy plants suited to miniature lawn planting. I refer to *Sciadopitys verticillata,* the parasol pine, one of the most extraordinary evergreens known. The plant we see on this lawn is scarcely two feet high, and yet it is more than ten years old. Travelers in Japan tell us of specimens in Japanese gar-

dens fifty and one hundred feet high; but certainly in youth the plant is wonderfully dwarf. Its strange habit is produced by the curiously long, broad, dark, green needles, or narrow-shaped leaves, that cluster in parasol-like tufts at the end of each succeeding year's growth. The color is as dark as that of the yew, and the growth as compact. It is, moreover, very hardy, and thus presents a combination of choice qualities of the most strange, attractive, and valuable character. The plant is so entirely original in its forms that it seems some lone type, the correlations of which are lost, or yet to be found. As we look upon it, we commence to realize how thoroughly most plants of the same genus, all over the globe, are related to each other, just because we can think of nothing else that resembles the parasol pine.

"A Japanese yew, near by, of rich and spreading habit, exemplifies this resemblance between various members of a genus situated in various parts of the earth. This Japanese yew *(Taxus cuspidata)* is however, very noteworthy for great hardiness, a character that can be scarcely accorded to any other yew in this climate. *Thuiopsis Standishii* is another Japanese plant on this lawn, of comparatively recent introduction. I want to call your attention to it, situated near the Retinosporas, not only because it is a beautiful evergreen, somewhat like the arbor-vitæ in general appearance, but because it does better here, apparently, than in England. This is a peculiarity remarkable in an evergreen, for the moist climate of England seems to make for them a very home."

I do not need to apologize for inserting this essay in full; because it will surely be helpful to a

very large class of those whom I desire to aid in making home delightful by the use of evergreens. Most of the trees which Mr. Parsons describes can be used in hedges, groups, and shelters. The true home builder is also a decorative artist.

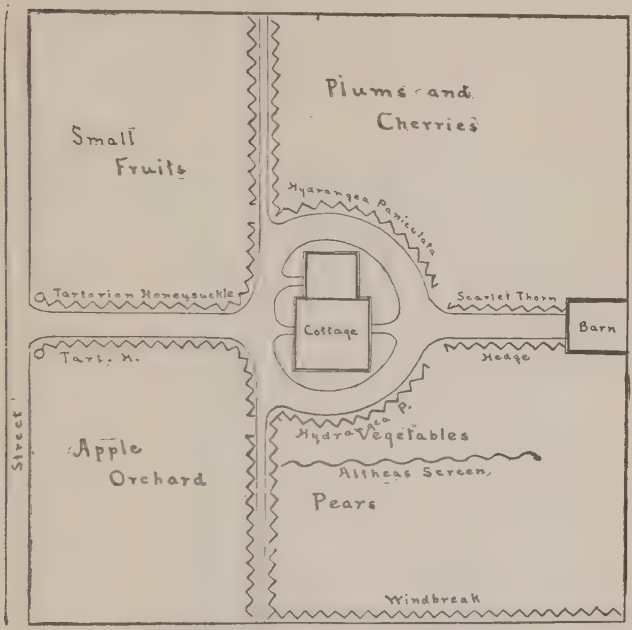



FIG. 8. GROUND PLAN OF VILLAGE PLOT, WITH FLOWERS, HEDGES AND WINDBREAKS.

(74) FIG. 9. SECOND ENTRANCE TO SUBURBAN HOME OF TWELVE ACRES.

# CHAPTER V.

## WINDBREAKS, SHELTERS, ETC.

While the hedge proper also serves largely as a protection against wind and storm, it is presumed not to be planted primarily for that purpose. The true windbreak is a very tall hedge, or a close row of evergreens, or grove, or a strip of forest. While I am an enthusiast on beautiful and useful hedges, I believe the subject of supreme importance for American agriculture and horticulture is just now how to protect ourselves and our grounds from violent winds and changes of temperature. Professor Bailey, in his admirable discussion of the subject, suggests that one reason why fruit growing is attended with increasing difficulties is because of the removal of the forests The result of forest destruction has been to make our summers hotter and dryer and our winters more extreme. It is not so much that the weather is colder than formerly, but that the changes are more frequent and sharper.

The forest aids the fruit grower in two ways: first, it prevents the severe sweep of winds breaking trees, and creating sudden atmospheric changes; second, it conserves and balances atmospheric moisture. The sweep of winds when undisturbed bears away the moisture from the soil and also from the trees and their buds. It is well known that fruit

buds will endure two or three degrees severer freezing when the air is moist than when it is dry. It is true that hedges and windbreaks and forests may hinder the free circulation of air over a very adjacent orchard, and they may harbor both insect enemies and fungous diseases. Professor Bailey suggests that we can and ought to do a great deal, in the way of eliminating from our forests, trees that are specially the breeders of our enemies. For instance, the wild cherry, which grows along the edge of our woods, is especially occupied by the tent caterpillar, and as a rule should be cut down. I follow Professor Bailey still farther, in his suggestion that we do not wish or need to protect ourselves from all sorts of winds. If wind passes over a large body of water, it becomes warmer by taking heat from the water as well as moisture. In this case a windbreak would be detrimental to the interests of the horticulturist. "From a general study of the subject it appears that, for interior localities, dense belts of evergreens, backed by forest trees to prevent evergreens from becoming ragged, are advisable, because winds coming off the land are liable to make the plantation colder. In localities influenced by bodies of water it is better to plant just enough to break the force of the wind." To sum up the whole subject: "A windbreak may exert a great influence upon a fruit plantation. The benefits derived from it are, protection from cold, lessening of evaporation, decrease of windfalls, facilitation of labor, enabling trees to grow more erect, encouragement of birds, and beauty of landscape."

I am so loath to divorce the useful and the beau-

tiful that my taste inclines very strongly to those forms of windbreaks that give more or less return of fruit. It is amazing how large an amount of grapes can be grown on a close row of deciduous trees, which become interlaced with the vines. It is true that as the vines climb higher much of the fruit will be out of reach for easy gathering, and that very little of it will be really marketable, but it is never out of reach of the birds. In the orchard we also have at hand an eminently fine tree for constructing fruitful windbreaks—I refer to the Buffum pear. This tree grows almost as a counterpart of the Lombardy poplar, erect, stiff and compact. It should never be cut back at the top, for it has no capacity for lateral growth. Set the trees about eight feet apart, and then let them take their own way. The result will be a wall, as smooth and perfect as a trimmed hedge. In blossom, the Buffum pear is simply superb, and later it will be loaded with golden pears, which while not first class are yet a very good second class. The fruit is one of the best that we have for pickling, and if picked before ripe becomes a very good dessert pear. Let them begin to yellow before picking, and then store or sell. The cropping power is astonishing. After the pears are gone, and in the later season, the leaves become a brilliant crimson. Of all lawn trees there are only two or three equal to the Buffum pear in autumn coloring, and I do not know one other pear that is equal to it. The leaves hang on until late, and a wall of them cannot be surpassed for magnificence. If instead of a windbreak you desire an avenue that shall be part shelter for your drives the Buffum pear still surpasses all trees for

close growth and rich foliage. In other words, here is a fruit that we would not select to any extent for orchard-growing, and yet it is so good that it will be welcomed when it affords us bushels, without any further labor than that of planting a windbreak.

A close row of dwarf apples is another device for combining fruit and shelter. Some of the dwarfs are delightfully compact and beautiful, whether singly or in rows. They are useful, however, only where you will be content with a windbreak ten feet high. The Ben Davis is a good apple for this purpose. Its branches droop, and in autumn bend gracefully down with a load of crimson fruit. The Astrakhan, not dwarfed, makes a splendid windbreak, bearing quite as well as in an open orchard. The Kirkland is extremely fine for close-growing, for dense foliage and for heavy cropping. The main point to be looked after, in planting apple tree shelters, is to select varieties with tough enduring wood. Other varieties, like the Baldwin and the Pound Sweet, will soon give way under the loads of fruit, or in windstorms; and present in the course of two or three years after bearing, a mass of brushwood. Such a windbreak must be trimmed of suckers as carefully as the trees in an orchard.

I have seen nature create some remarkably good windbreaks with wild cherries and wild plums. The latter particularly are good for their fruit as well as their shelter. It is well for us to give nature the cue, by starting along a required line a choice variety of plums like the Lombard, from which suckers will soon fill up all the space allowed. But here again there will be constant need of the saw and pruning

knife, because as new trees appear, some of the old ones are sure of continually dying. I have already suggested the danger from wild cherry trees, that they will become breeders of tent and other caterpillars, yet they are very beautiful in close rows.

A protective wall of crab apple trees is one of the easiest to be made and one of the most useful. These trees, however, should not be set closer than fifteen feet. Let them branch out six or eight feet in each direction, and let the branches start about five or six feet from the ground. After the first crop of apples these branches will droop to the sod. Remember that such a row of trees must have room. It must not be used as a close hedge, for then its beauty as well as its utility will be sacrificed. If you know of anything more beautiful than a Martha or Hyslop crab in full bloom, it must be the same tree in full fruit. A row of these trees standing twenty feet high, and touching the ground with their branches, will delight the dullest eye. The value of the fruit is at the same time considerable for home use, or market. The demand for the best varieties of crab apples is on the increase. Prices range about with the prices of dessert apples in the autumn months.

No one can fail to get excellent hints from the way nature creates her windbreaks wherever she is permitted an opportunity. Watch how rapidly along every line of old fence these appear. The farmer can do no better than to let them grow. Oaks, ashes, elms, chestnuts, will thus stand close, or in groups, while underneath crowd elders, haws and hazels. Wild grapevines climb through and interlace the

whole, with here and there a few loops of Virginia creeper. I defy you to find anything more beautiful. But it is the value of these palisades against the storm and the wind that we should most think of. I know farmers who have shown their first title to ownership by cutting down all such encumbrances. They look upon them as occupants of good soil which should be put to better purposes. In one case, where I have had excellent opportunity for observation, the owner has so changed the climate that where quince orchards grew to perfection, nothing of the kind will at present thrive. It is well sometimes to join hands with nature and board up or otherwise protect such a line of trees. Behind such a protection half-hardy crops and trees will be sufficiently helped to become toughened to the climate. Many of our shrubs and trees only need guarding carefully for the first four or five years of their growth, after which they become acclimated and hardy.

In a few cases I have found it advisable to use movable winter fences instead of planting shrubs or trees, removing them when spring returns. These are especially useful to the north and west of vineyards and quince orchards. I have also found them useful in making a currant crop certain and in breaking from my gooseberry rows the full force of the wind, but in the latter case the protection is of more importance in breaking the force of the hot winds in summer. Such fences are not desirable to shield peach trees and plums, which are more likely to be induced to make late growth or soften their blossom buds in the warm winter sun. Some of the pear trees, notably the Seckel and Sheldon, are easily

started by warm exposure in midwinter, and the buds afterward killed by a sharp freeze.

However, I believe that in most cases where the climate is severe, or where the winds have a broad sweep, our best resort is to evergreen trees. In this section I do not know of any tree that is better than the arbor-vitae, either the American or the Siberian variety. Next to this I should select the Norway spruce. This magnificent tree has shown its capacity for adapting itself to a great range of soils, and is everywhere absolutely hardy. In planting the Norway spruce I should by all means prefer a row of trees standing so far apart that each one might be individually well developed. This would require a distance of at least twenty feet. If it be desirable to form a windbreak very speedily, plant intermediate trees, which shall be carefully removed as soon as the trees begin to impinge. Where space and room are of no special importance, additional beauty can be secured by planting at determinate points groups of these trees, that is, at every ten or twenty rods let the line be broken by a group of three to five trees. These should stand closer together, so that when they are twenty or thirty feet high they will make but one compact outline. If desired these may be made very pleasant shelters for seats in summer.

The arbor-vitæ I should plant as a rule more after the manner of a hedge, letting the plants at the outset stand four or five feet apart. The erect arbor-vitæ is exceedingly fine for the purpose we are considering, but it should stand even closer in the row than the common arbor-vitæ. The beautiful hemlock is not so perfect for a windbreak as it is for

FIG. 10. WINDBREAK OF CEDAR FORTY FEET HIGH. HOUSE ABOVE ENTIRELY CONCEALED.

a hedge, because of its propensity to lose the lower branches. Still its dense foliage and noble green color make it rank high for shelter. In New England and some parts of the Northwest, what can be finer than the white pine, while in the Southern states the yellow pine is used by nature for a shelter and may well be used by man. One of the grandest of the pines to create a solid wall is *Pinus Cembra*. This tree does not rise with me above eighteen or twenty feet, and it makes a diameter of about ten feet, while each tree is compact and sits firmly on the sod. It is a grand tree for all purposes.

I quote from a very judicious article issued by the Iowa Horticultural Society. For wind-swept prairies "white spruce, silver spruce and Black Hills spruce are all good for single row evergreen shelters. Norway and arbor-vitæ are good on dark, retentive black loams, but not generally on light, thin prairie soils or exposed hilly locations. Farm shelter belts should differ. They should be located around building sites and yards, and the inside rows should be one hundred and fifty feet back to keep snowdrifts out of the yard. If land is not plenty, use only evergreens, but if plenty the quickest growing deciduous cottonwood and willow can be used. For the outside rows, next to the wind, plant two rows of cottonwood cuttings, then come in sixteen feet toward the buildings and plant two rows of willow cuttings parallel with the cottonwood. So in alternate planting set four pairs of rows each. Thickly-set willow will keep wind out below, but cottonwood throws it up. Now, inside toward the buildings, thirty-two feet from the last row of willows, plant Scotch pine;

thirty-two feet further in a row of white pine; and thirty-two feet in further a row of white spruce, Black Hill spruce, or silver spruce. Set evergreens twelve feet apart in rows alternate; willows and cottonwood four feet apart in rows. All trees should be planted on ground in high tilth. It should be given all summer annual cultivation, and mulch each fall for over winter. Continue cultivation until you cannot get through, then seed to clover, where it will grow. Evergreens ten to fifteen inches high, that have been transplanted, are best to use. A grove of all Northern red cedar makes the best grove for high dry prairie soil. Do not let evergreen trees lay around exposed to dry air or winds when planted. Do not water them, but cultivate and hoe them the same as the best garden crop." I agree with most of this so thoroughly that I give it in full. I do not, however, assent to the position that it is best to plant small evergreens ten to fifteen inches high. It is more than can be asked of most farmers to wait for the development of such trees to become good windbreaks. I should set, by all means, trees four or five feet high, provided they can be obtained. As for watering trees, I have already suggested that they should be thoroughly watered, but it is understood by good cultivators that hoeing a plant is equivalent to watering it. At all events do not let an evergreen even approach dryness of the roots.

Among deciduous trees and shrubs the willow is quite as good in the East as in the West. The cottonwood is not procurable or usable in most of the Eastern states. Both of these trees prefer moist soil. I have seen some admirable windbreaks made

by thrusting long sticks of willows into the soil, about eight feet apart. These develop into trees with great rapidity. It is very desirable in some sections to multiply our nut trees by allowing them to grow along the fences. The butternut in this section makes a very good protection against the wind, but the trees should not stand nearer than twenty feet.

Among smaller trees, I recommend as exceedingly fine for both protection and ornament the cork-barked maple. When I first procured this tree it was mentioned to me as not quite hardy, but I have found it entirely so and very enduring. The tree rises to a hight of twelve feet, is almost exactly round, and the foliage is as novel as the bark. It has almost the exact form of some of our round-topped evergreens. The beeches, which I have already spoken of as suitable for hedges, make also the very best of low windbreaks. In growth they are very solid, and the tendency is to retain leaves late in the winter. I do not know of anything more superb than the thorns in blossom. None of them take a very large amount of root room, and a wall of double scarlet thorn would, I imagine, lead a pilgrimage of the whole population to gaze on it. A single tree is a marvel of beauty. If used for the purpose I suggest, plant them about eight feet apart.

For low-growing windbreaks I would recommend very especially the *Exochorda grandiflora*, growing about ten feet high. It is very tough in wood and very rarely is affected at all by the severest weather. I have in a few cases had a few twigs killed back. The blossoms are saucer-shaped, large and pure white, and in May are among the most

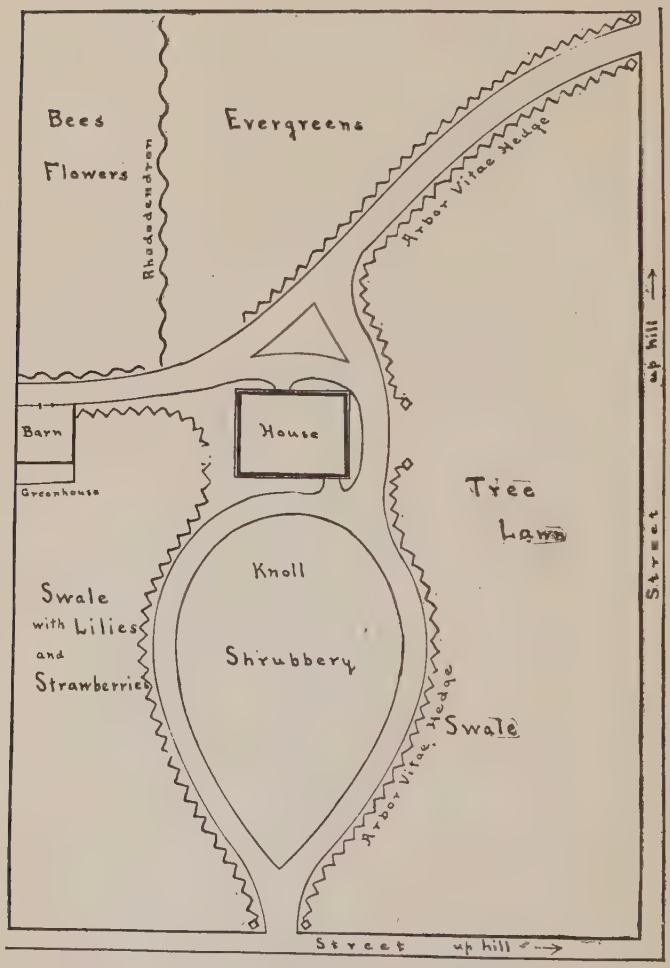



FIG. 11. GROUND PLAN OF COUNTRY PLACE WITH ARBOR-VITAE HEDGES.

beautiful of the flowers borne by our shrubs. To thicken the growth of such a windbreak or to make more beautiful the frontage, I would use with great freedom the Japan quince. This shrub occurs in red, white and pink flowers. The fruit is often quite abundant later in the season and is of the very highest quality for making jelly. It is also very valuable as a perfume in drawers of clothes. It will send out a rich fragrance for years without rotting. I would suggest for an ornamental windbreak, a background of hemlock or arbor-vitæ, with a row of thorns, fronted by a third row of Japan quince. Our garden quince, where it is entirely hardy, is also a really admirable plant for hedge or windbreak. Its growth is irregular, but it can be very easily controlled.

There is some appropriate demand in our ornamental grounds for shelters or hedges of double lines, through which we shall have sheltered walks leading to sheltered seats. We have several small-growing trees suited to this purpose. Among the best are the weeping elm, the sassafras, the Judas tree and the wild apples. A densely covered walk of the latter, run over with wild grapes, makes a remarkably cool retreat in summer and warm in winter. Scott, in his "Beautiful Homes," recommends the sassafras, cutting back the top, and compelling an umbrella form, until the trees weave their tops together to make a complete canopy to cover as much space as you please. The mulberry can be compelled with ease to take on a similar growth. The Judas tree is equally good, and a double row of these, arched together, is a wonderfully fine sight in spring when, before leaves appear, the whole is a mass of bloom.

A single tree will cover a square of twenty feet, when grown under the best conditions. But it must be remembered that we have always to reckon with the tendency of this tree to split down directly through the heart or to break off large branches. This must be prevented by watching for indications of the split, and binding it with bands of hoop iron. The arrangement suggested above does not forfeit the rule of doing nothing antagonistic to nature. Such a development of these trees is entirely natural, because in all ways the tree suggests massiveness.

> All weave on high a verdant roof,
> That keeps the very sun aloof;
> Making a twilight soft and green
> Within the column-vaulted scene.

## SECTION I—WINDBREAKS FOR SPECIAL PURPOSES.

It will not be foreign to the purpose of this chapter if I suggest windbreaks for special purposes. (1) For bees: Every landowner will do well to have an apiary. Bees are indispensable to aid in pollenizing our fruits, many of which are unable to pollenize themselves. Besides half a dozen hives will give a very welcome supply of honey for family use, while a surplus is very useful in adding to the farmer's income. The best honey tree in the world is the basswood. This tree bears cutting remarkably well, and can be kept, by persistent cutting, in the form of a round-headed shrub. I have them thirty years old and ten feet in hight and diameter. Now let a hedge of this sort be established, and then let rise out of it, twenty feet apart, shoots that shall

make blossoming trees. You will then have a shelter for your bees as well as honey-making food. But a grove or double row of basswood, where there is abundance of land, will prove exceedingly valuable, both as a windbreak and honey producer. This tree should be planted much more freely in our streets, and everywhere, as the great American shade tree. (2) Give to your pastures corners where the wind cannot penetrate. This, even where your land is not extensive, will be no loss, but by affording your animals comfort will increase the flow of milk as much as good pasturage. It is the misery of animals, both in the cold of winter and the heat of summer, that makes them less valuable as milk producers. A very convenient arrangement can be made by growing vines—preferably grapevines—over a group of small growing trees, wild apples, or thorns, or English elms, or any trees with tough wood. You get your crops of grapes, or your cowboys do, and your cows get their shelter. They will accept of it at all seasons, for it is a mistake that the cow does not appreciate the beautiful. I think I never saw a cow lie down with her back to the moon and to a pleasant outlook.

You will probably be astonished to find how much the general humidity of your acres is increased as you increase your windbreaks. For the same reason grow grapes all over your houses and barns. Let them climb not on the clapboards, but by a series of wires running a few feet apart across the whole of the faces of the building. You will then staple your wire at convenient distances, and tie the growing vines as they climb. Here once more you will

get immense crops of grapes; and you will gain greatly in the coolness of the barn and stables for your cattle, and of the house for its occupants. While the temperature is equalized and the soil of your land is increased in humidity, you will find that there is no gathering of dampness in your walls, provided you have followed the directions I have given, that is, of tying to wires instead of nailing to the boards.

The windbreak and the brook—this is the combination that expresses the most of possible delight. The farmer too seldom utilizes his water supply, except to serve the barnyard and house. A windbreak of willows arching over the brook is not only useful, but one of the most beautiful pictures that nature allows. You have only to procure good sticks of willow and insert them in the moist banks. A neighbor's willow grove serves as a grand entrance way to his mansion, but for me, being on the eastward side of it, it serves as a windbreak. But if you have a brook you should at least utilize it in some way as a summer retreat. It offers a place for a wild grape or bittersweet shelter. Let it be as wild as possible. But if the brook runs through the open meadow or pasture, a double row of nut trees on the banks will do far more than furnish a summer shelter and a winter windbreak, it will make home doubly joyful for the young folk. Almost all of the nut trees, such as butternuts, hickory nuts, walnuts, chestnuts, associate pleasantly with water.

Of vines capable of use in interweaving windbreaks, the bittersweet is exceedingly fine. It is perfectly hardy, very tenacious, and hangs in festoons and loops of vine and berry. Combined with

Virginia creeper we get the gold and the crimson together. Among the really good grapes, capable of helping us in the way of making shelters, I know nothing to surpass the August Giant. This grape should be better known on the farm. It is the most rapid grower that I have found among nearly one hundred varieties. It will make canes twenty, thirty and even forty feet long in a single season, while the foliage is very large, rich and abundant. The leaves are like palmleaf fans. The fruit is also thoroughly good. The time of ripening is rather late in central New York, but, as a rule, it perfects itself by the first to the tenth of October. The Gaertner and the Herbert are also very large-leaved varieties and of magnificent growth, while their fruit is of the highest quality. They will both need considerable care, because not absolutely hardy, nor self-pollenizing, while August Giant will take excellent care of itself. It will quickly cover an arbor or interlace your trees, and will not be easily torn down by wind.

But in the consideration of this subject I can do nothing so well for you as to say, get into some wild section and study nature. See what beautiful things she can construct, and then go you and do likewise, or as near likewise as your opportunities afford. The most beautiful things in this world are in the forest openings and in the wild glens and in the forests.

"Whether we look, or whether we listen,
We hear life murmur, or see it glisten;
Every clod feels a stir of might,
An instinct within it that reaches and towers,
And, groping blindly above it for light,
Climbs to a soul in grass and flowers."

(92)

FIG. 12. HEDGE OF ARBOR-VITAE IN WINTER.

Planting for winter is too much overlooked—that is, planting our grounds in such a way that they will be cheerful and warmer to the eye. But it is one of the most important matters in the country to warm up the landscape during cheerless months. I have before spoken of the use of the red-bark dogwood. The high-bush cranberry is also admirable, although as it gets older its tallest stalks are liable to get topheavy and split down. The barberry, in its several varieties, makes a charming plant for this purpose. It is a delightful winter bush. The Euonymus is a bush that for early winter cannot be surpassed. Its growth is irregular and its form uncertain. I cannot recommend either this or the high-bush cranberry, excepting as they are interspaced with other bushes, as good for either hedges or windbreaks. However, the man who studies nature will find that he can use all of this class of trees and shrubs for beauty and utility alike.

One of my nooks, made up in part of hemlock hedges and in part of these warm winter shrubs, I call my Sunlight Catcher. It catches the full rays of the winter's suns, and has complete protection from the northern and western winds. It is often a delightful spot during November and December, and in the spring there are March days when it is an invigorating retreat. I can find a few spears of grass or a dandelion blossom almost in midwinter, when a single one is worth more than an acre of them in June. The hedge itself is eight feet high, curved completely around toward the northwest, while to the south at a distance of twenty-five feet is another windbreak. But now note the need of

making things match well together. In here stands a great barberry bush, that all winter is so red that you can warm your fingers by it. Here come the earliest violets, like finger-tips of Spring thrust through the snow.

While planting windbreaks we have of course to consult our neighbors' wishes and tastes, if they are near enough to be affected by what we propose. It is morally illegal to cut off the pleasures of a neighbor by a high hedge, a row of trees or a fence. With neighborly good will we can generally manage not to infringe on other's tastes or desires. I trust we shall see before long co-operation and town systems of establishing defenses against the wind. No person should be privileged to destroy that which affects his neighbor's crops and comforts as well as his own. If street trees should be under the protection of the law, so also should windbreaks and strips of forest land. Towns should assume the right in very exposed points to plant trees at public expense on private property. Co-operative tree planting, I think, may yet do a great deal for the general good of horticulture. I would especially recommend the establishment of rural societies, whose object it shall be to set out trees for the public welfare, and to protect others in which the public has a general interest. Such societies will have much also to do in the way of investigating the causes of tree diseases, and their remedies. In central New York such a society has existed at Clinton for forty-five years, and it has fostered rural improvement in every direction. The meetings are held monthly, and the range of discussion covers every topic pertaining to the welfare of

rural homes. Clinton, Conn., has perhaps the parent society of this sort. Street trees are planted by these associations; but better yet is the advice given to private owners, in the way of selecting trees and plants for their lawns and hedges.

## SECTION II—BIRD CULTURE.

So very important at the present time is the cultivation of birds in the interest of horticulture and agriculture that I make a separate section of the discussion. Hedges and windbreaks may serve a very important end, both in furnishing shelter and in furnishing food for these feathered friends of ours. We are learning that success in agriculture depends much upon their alliance. Among the more important in this section are the catbirds, robins, song sparrows and their cousins, with the goldfinches and other seed eaters. The first of these destroy vast quantities of insects, while the latter destroy the seeds of noxious weeds. The benefit that accrues to us is so great that we can hardly succeed in some branches of horticulture without them. Apart from the benefit which they do us in the way of destroying our foes, we must count in the advantage to us from making home delightful with their songs. Man cannot live by bread alone—that is, he cannot live in a manly way. I will go so far as to say there is no other object in hedge planting and the growing of windbreaks more important than that of bird protection and bird fostering. The destruction of our feathered friends is but one degree worse than their neglect.

(96) FIG. 13. SHRUBBERY LAWN WITH ORNAMENTAL HEDGES.

It is winter as I write these words. The snow covers the ground and is piled deep in every direction. But as I look out of my window I see pine grosbeaks on my barberry bushes and high-bush cranberries; and there are dozens of chickadees, nuthatches and woodpeckers working at bones which my children have tied to the trees near the doors. These birds add much to the good cheer of life, and to feed them inculcates the very noblest sentiment of sympathy with God and God's world of life. I am sure that no girl brought up in this manner would ever wear a dead bird on her hat, or even the wing of one. I am farther sure that my children will appreciate better the relations of things; love free nature better, and be students of that horticulture which includes all life. I should indeed be sorry if they looked upon horticulture as covering only the growing of corn and fruit—all things which cannot sing and cannot express gratitude. The end of land culture is noble men, not merely potatoes and parsnips. Put these things together, and you will see that you have not planted your hedges and made beauty and comfort for yourself alone, but for all that is animate.

The birds must be fed; this is our first duty and relation to them,—to make our places just as fully theirs as our own. But our policy is also to feed them at the least possible cost to ourselves. A Tartarian honeysuckle hedge or windbreak of five rods' length will feed all the robins and catbirds that will come to any household, and will do it just when it is desirable to attract them away from the raspberry gardens and from the blackberries. The crop of red

berries on these bushes is enormous, and while they are to us bitter and worthless, they seem to be peculiarly grateful to the fruit-eating birds. Perhaps next in importance is a row of mountain ash trees

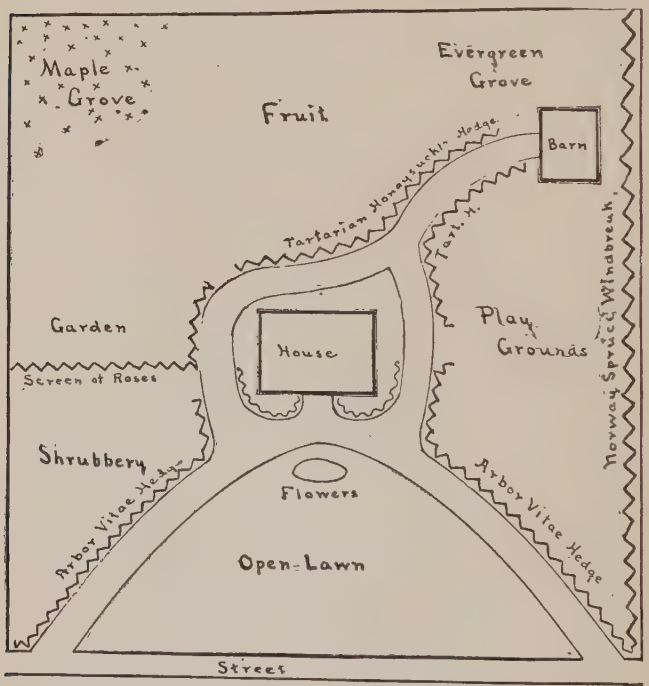



FIG. 14. GROUND PLAN OF COUNTRY PLACE, SHELTERED BY NORWAY SPRUCE.

grown as a windbreak. If you prefer, you may combine the two by inserting a mountain ash at every twenty or thirty feet in your honeysuckle hedge. This mountain ash tree grows to a hight of about

twenty-five or thirty feet. A single fully-grown tree will feed flocks of birds from early August until late in winter. All winter through, birds of passage will drop down to a breakfast or a dinner. This enlivens your house besides making it a bird paradise. I should never establish a home without a liberal planting of the mountain ash; and to make them doubly useful, I would not only have them singly near my house, but growing as a windbreak at some distance. The twigs are set very thick and intertwined, so that they constitute a very excellent shield against the wind at all seasons. Another remarkably fine bush, both for its beauty and for the food which it affords the birds, I have before specified as the high-bush cranberry. If it were not for the liability of this bush to become sprawling with age, it would be admirable for a tall hedge or low windbreak. The tendency can be counteracted by running a couple of lines of strong wire, with an occasional loop, about the heavier stalks. The flowers are inconspicuous, but the berries, which begin to color in July a bright yellow, hang in most prolific bunches of great beauty. In August these have become deepened in color to a dark, rich crimson. The birds rarely feed on these berries before winter, that is, if there be an abundance of the mountain ash. But in midwinter, cedar birds, stray robins and pine grosbeaks get from them many a hearty meal. The magnificent coloring and the hearty good nature of the pine grosbeak makes it a remarkably welcome bird. It is the winter robin.

How far we can modify the migratory habits of birds by giving shelter and food, I do not dare to say, although some ornithologists insist that they do

not go South on account of the climate; but purely on account of the insufficiency of food at the North during the winter months. I am sure that we can do very much to retain our visitors through a longer season, and make them feel that this is not a mere summer home. I have noted the catbird catching flies and eating grapes about October first, indicating a shortage of the food which he prefers. But my pet bird (I have six catbirds' nests in my bushes and hedges, all of them members of my family) always sings to me the day before going away, and that is about the twenty-eighth of September. These glorious musicians, the mocking-birds of the North, do not sing at all as a rule after about August first, but this one, that nests every year near my library balcony and considers himself a little the most at home with us, hunts me up the day before leaving, peeps in at the window and sings a long and tender farewell. I do not think he needs to go away because food is cut off, or because of bad weather. It may be that he knows something that he likes is just then getting ripe down South, and he proposes to make it a visit. However, I am sure we can make these beautiful and useful friends feel at home with us by giving them acceptable nesting places and food. This one bird, of all others, most desirable as a singer and friend, will not come to us or near to our homes unless we furnish coverts for hiding, such as he will find in hedges and windbreaks. After you have once made the catbirds feel at home with you, so that they pour out their music without fear or restraint, you will never be willing to pass a summer without them.

The berry grower is very likely to disagree with

FIG. 15. WOMAN'S SEWING BALCONY.

me, at first thought, with reference to the neighborhood of fruit-eaters. Bear this in mind, that if you plant a very few bushes of berries or a single cherry tree you are likely to find that you have only a supply for either the birds or yourself, and the birds will find out the same thing. As a consequence you will probably go without cherries and berries, and the birds will take them. The better plan is to count the birds into the family, and plant for both. I do not easily forget a father who, many years ago, I detected grafting the wild cherry trees with sweeter sorts, along the edge of the woods, in order that, as he said, "the birds might have all they wanted." That father was not only wise as a bird friend, but wise as a horticulturist.

### SECTION III—THE WOMAN'S CORNER.

Of course every woman is interested in all measures to beautify home and make it more valuable, but there are certain feminine needs not quite covered in the general plan of horticultural work. For instance, woman is specifically the sewer of rents and the artist of the needle. As such she should have (1) a sewing balcony. Let me describe one. It is in the northeast corner of the house over a veranda. The building to south and west cuts off the afternoon sun. There is a grapevine that climbs up the north side of the veranda below, then goes up over a strong trellis that reaches over the balcony. It is a wild grape and a rampant grower, and it has made a complete awning overhead. It bears profitably a good jelly grape. The floor of the balcony

is made waterproof. Opening upon it is a double door from the wife's chamber. It is called in household terms, "My sewing balcony." I cannot positively say that she does much sewing there; but I do know that it is a most delightful spot of a summer afternoon, where one might sew if so inclined, and with great comfort. A hammock swings across one corner, admirably fixed for an afternoon siesta. I will not say that the hammock and the book do not frequently displace the needle. The outlook is over lawns of flowers and trees, over hedges and groves, down the most beautiful of valleys, and overlooking hills that hold villages in their bosoms. Woman has a right to such retreats, sheltered from the sun, and peculiarly her own. She does the hardest task—the fretting, nerve-wearing work.

(2) Woman should have a living arbor for a little tea party of half a dozen neighbors. Let me also describe one of these. A circle of arbor-vitæ, fifteen or twenty feet in diameter, and grown together overhead. Inside, the branches are cut out, up to a hight of fifteen feet. The only entrance is where you pull aside the branches. Inside you find a little table, a small solid, plain writing-desk, and half a dozen hardwood chairs that will endure the rain. A hammock swings on one side, which can be stretched across when it is desired. This shelter is adjacent to a fine croquet ground, and, if you please, you may invite your friends to a game, alternated with rest. Here a wife may fix a charming enclosure for a baby, giving him plenty of freedom as well as protection from the sun, or she may have her friends for a tea party. I have known a club of ladies meeting in

such a close retreat, and heartily enjoying the reading of their papers.

(3) Woman should have a cozy nook for some outdoor household work, such as washing and hanging clothes to dry. This is the meanest desecration of a beautiful lawn—a lot of shirts and socks and "sich like" on exhibition once every week. Some of these are not yet mended, and they are not attractive, at the best. A delicate housewife hates to proclaim to all the world the condition of the family wardrobe. Why should not every beautiful home have a retreat and shelter, behind a windbreak, or high hedge, where family affairs of this sort may be kept private. It is not a tax on a householder to have a cistern in such a nook where the water can be easily drawn, and where the clothes may be hung out to dry without much walking or carrying. There is also the safety of the clothes to be looked after, and that is secured by such a retired spot. At any rate, let our pleasant country homes get rid of the display of their weekly cleansing.

(4) Woman needs her particular flower nook, where she can work a little, rest a little, think a little, and sleep in a hammock if she likes. I assure you I shall feel that my book has done some good if I discover hereafter that I have induced some of our housekeepers to take an afternoon sleep of a single hour. Especially should farmers and farmers' wives have a rest corner, shut out of sight of the ordinary work of house and field, so that there will be suggestions of rest and peace, and none at all of toil. They will be able to do more in the long run by not running life's machinery down in great speed.

## CHAPTER VI.

### NEGLECTED BEAUTY.

I should like to write a chapter on the neglected beautiful things that surround us, a sort of eye-opener to help folk see what is right before their faces. I know a man—not cut from a fashion plate—who sees none of the things that most people see, an impracticable fellow; but he sees everything that we do not see. If you will visit him, you will find his barn is almost embowered with grapevines and bittersweet and Virginia creeper. He has cut holes for his team to drive through. "Pretty, ain't it," he says, "and it's sort o' comfortin' to see the red, and then I get lots of grapes for nothin'. The vines break the wind, and some days it's mighty nice to get inside of them. It's most like having two roofs on your barn, and growin' a crop between them. Besides the birds like it. There's a dozen nests of them up there—all snug as you please. Did you ever notice the two kinds of bittersweet? This kind is the male and don't bear any seed. That clematis over there is female. See what splendid bunches of seed pods it has, like balls of flaxen hair." So he rattles on, full of natural enthusiasm, and I find he is quite a student as well as observer. In his shop he has a collection of esthetic birds' nests, the finest I ever saw or heard of. He has collected all the springs on his upper lot, and down below has scooped

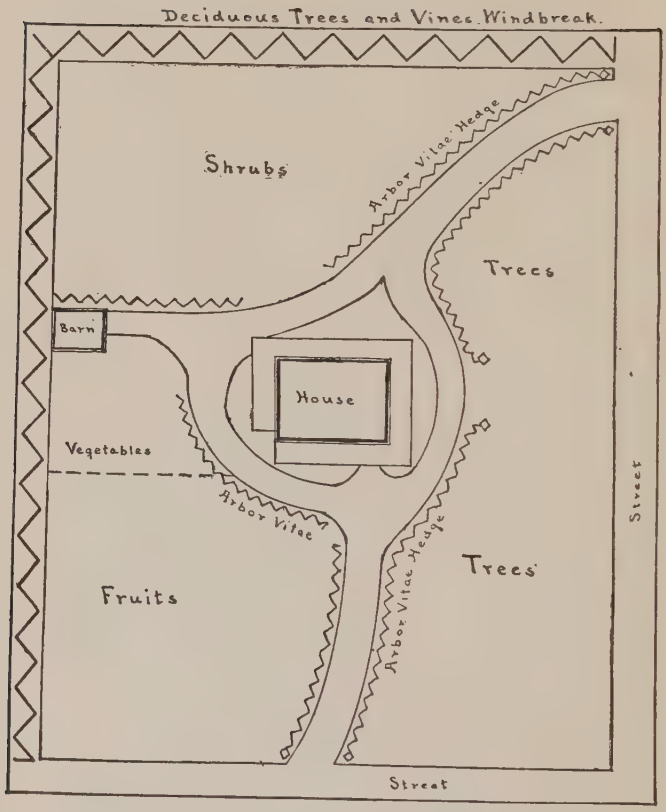



FIG. 16. GROUND PLAN OF COUNTRY PLACE.

out a pond to hold water; behind and around are huge willows, and here is a perfect paradise for his fowls. An arbor of stone down the swale, with a few bits of hedges adjacent, all the work of his own hand, makes a quaint but delightful combination. I asked him how he came to think of it. "Why, they came up there; and I didn't want to cut them after they had got up, so I trimmed them into hedges. The arbor is just a lot of the stones that I wanted picked up. It's better than a heap of stones, isn't it? Folks ain't observing enough. If they were, nature would help them to a good many nice-looking things, just as easy as she does to so many old brush heaps and stone piles. That's my reckoning. And them things don't pay, either; but it does pay to have things pretty and nice. If a fellow keeps his eyes open he doesn't have to work so hard. You see I didn't hardly have to touch these things—just took advantage of what nature did. Did you ever see anything finer than that old rail fence? It's just a wall of crimson, and I didn't plant one of them Virginia creepers; I only let them alone. They took possession of the old fence and made it beautiful. But it would pay anyone to plant such vines along his old fences, just to look at. Don't you agree with me?" I told him I thought I did. But said I, "What have you got there?" "Oh, that's a bunch of elms, and those grapes came up and run all over them. Just see how they hang down in ropes all over! It's a great windbreak, that is; and there's another mighty nice one over there—those evergreens. I haven't got so many jimcracks as most folks have—I never bought half so much; but you bet I look out

not to let some one spoil what's been planted for me, without money and without price." Among his treasures is a plum tree hedge, not of much value for plums, but useful around his henyard.

I found him rather too conservative about cutting, so that there was a tendency to thicket growth in his groves, and even around his house. His love for trees and vines, and all the artist touches of nature, goes down to the minutest twig, and it hurts him not to save every tree. Each bush gets to be dear to him. I am afraid that this temperament is not quite the thing for a farmer, unless he can have a large area and keep his thickets at a little distance from his house. It is a duty to cut liberally and judiciously, as well as to plant freely and wisely. There are hundreds of places where the ax is needed more than the spade. The art of cutting is the fine art of horticulture—finer than that of planting. Physical nature is never complete without a man in it to trim and guide. Yet between the two, that is, wild nature and an untrained man, give me the former. What this man, my neighbor, had learned was to do exactly what a man is designed for, to take advantage of what nature does, to aid her and not to thwart her in the accomplishment of her best work. He could see along nature's lines.

I sincerely believe the worst thing about our country homes is imitation, the desire to plant what others plant, to do what others do, and in general to have what others have. For really, there are rarely two spots of land that allow of just the same treatment, nor are there two building spots where exactly similar houses ought to be put up. A house

should be built to, or out of, the spot where it stands, as if it grew there, quite as much as the trees grew there that were cut down to make room for it. Those trees did not grow with just the same physiognomy as trees in another locality. Then a lot ought not to be like a girl's apron, full of posies, but should have in it or on it those plants or trees which fit the lay of the land. One may accumulate a vast amount of fine things in themselves, and yet the whole of them be anything but beautiful in their relation to each other and to the house. Perhaps you do not need a hedge at all. If not, pray do not have it, certainly not because Smith has one. I know a village where a man put up a board fence with the two middle boards crossed in the form of an X. Inside of two years there were eighteen other such fences put up in the same village. One of these was quite enough.

My friend R— saw a cut-leaved weeping birch and admired it. He ordered two set out in his door-yard at once. One was enough; two spoiled the oddity of the peculiar tree, and the pleasure of looking at that one. Oddities should be odd, and not too freely used. But if you will study a country village you will rarely find much individuality in the planting. There will be perhaps three or four types of houses, of yards, of shrubberies, of orchards. Everybody is trying to do what everybody else is doing; trying to think, trying to believe, trying to do and trying to be happy in the same way. If a man like Thoreau comes along, who sees wild nature and enjoys it, they cannot either understand or tolerate him—it must be allowed that he cannot tolerate

them. By the way, it was Thoreau who said, "The forms of beauty fall naturally around the path of him who is in the performance of his natural work, as the curled shaving drops from the plane, and borings cluster around the augur. Trees make an admirable fence to a landscape. Art can never match the luxury and superfluity of nature." In another mood, he says, "Men nowhere lead a natural life, round which the vines cling and which the elm willingly shadows. Man will desecrate nature with his touch, and so the beauty of the world remains veiled to him." If you are doing the most wonderful thing in the world, that is, making a home, let it be *your* home—the home or house of you—not of the ubiquitous, everlasting and universal Mr. They.

If you will go about the country and think of it you will be surprised at the vast variety of the wild plants, and their combinations, and the novelty of every form and shade. There are nowhere two groups just alike, rarely two trees that resemble each other. I do not remember anywhere anything beautiful in the wild state that had repetition, except, possibly, white pine trees. These sometimes occur along the mountain sides in absolute profusion and much alike, both in grouping, and in color, and in form. Still, even here, nature manages to give us a flush of novelty at every rod. Sumac bushes blister the sides of the hills with fiery crimson, but no two bunchings of these bushes are alike, not even in color.

It will not be out of line with the purport of this chapter to call attention to the neglected values of stone on our stony farms. A stone wall, ten or

twelve feet high, built of waste or troublesome material, can often be had, to the great advantage of the sheltered property. Against this wall may be planted a row of grapes, to train over it, or over a trellis leaning against the wall. Or a row of pear trees may be grown in like manner and trained espalier. This plan of training fruit trees is not adopted to any extent in this country, but is practical almost anywhere, and by it may be produced much fine fruit. This plan can be especially recommended for growing peach trees. The wall will probably be sufficient also for a quince garden. Such walls, considering endurance and effect, would be cheaper in the long run than high board fences, such as I have known to be used in northern and central New York and Massachusetts. The sheltering effect of such a wall is the same as I have already noticed in the use of evergreen hedges. Under the lee of them I have seen dandelions blossoming in December. It makes a capital shelter for winter violets, for the Helleborus niger, and for hardy chrysanthemums.

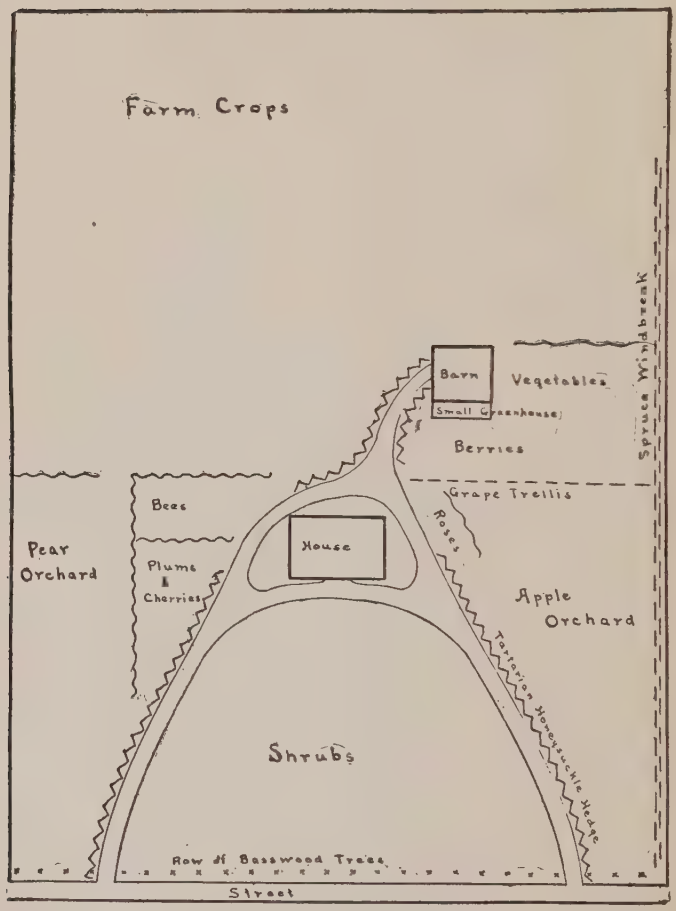



FIG. 17. GROUND PLAN OF FARM PLOT, WITH TARTARIAN HONEYSUCKLE HEDGES.

## CHAPTER VII.

### MISPLACED HEDGES, WINDBREAKS, ETC.

I have already spoken of the necessity of study before planting. We must place a little more emphasis on this matter and consider it in brief detail. The majority of planters look only at a thing which is beautiful in its solitary unrelated charms. The educated eye finds fault with detail that is out of relation to the whole scene. I am frequently asked to secure for someone three or four weeping cut-leaved birches, or some other tree charming in itself. What will he do with them? Probably plant them in a row, as my friend S— has done. Does he not get all the charm from one? Two or three bring him the idea of a row. But a row of such trees is not beautiful unless there is an object in having such a row. So with any other charming thing. A hedge is often misplaced because it is only an effort to get a pretty thing multiplied. But more frequently it is an effort to have a hedge at all events somewhere. The owner has not studied his place, or the relations of its parts. His first impulse is to plant along the roadside. But the old reason for a road fence is gone. A lawn is far more beautiful if left open to the highway. Animals do not any longer run at large, and our neighbors are not our foes. Besides the expense of street hedges is a useless cost. They generally run along lines of trees where the shade

injures them. But a hedge may also be misplaced elsewhere. It should not cut off our own view toward a pleasant scene. It should often break up a view into pictures.

Windbreaks must be endured as a necessity, sometimes, along lines where we do not wish to have them. But neither windbreak, nor hedge, nor tree are out of place because they do not let you see everywhere without interruption and at once. A true landscape home is one where you get glimpses and pictures of hill, or valley, or town from different points; not the whole at once, and always the same. I have seen some wicked cutting of trees and destruction of hedges because the new possessor of a home was ambitious to see "far off." He did not wait long enough to see that what he cut did no harm whatever, but on the contrary was an artistic supplement to nature. The resident does not have the same needs as the visitor—the latter desires to see the whole landscape at one sweep, the resident enjoys it better by glimpses and pictures. Study your place; study all its possibilities before you take either spade to plant, or saw to trim, or ax to cut. Either tool in the hands of a horticulturist fool will create more folly in an hour than you can undo in half a century. Go around the tree; walk up and down the hedge; study it in all its relations and all its possible relations; then wait a few months and study it once more at another season. You may be converted to see that it is above all things not to be cut. But if after that you do cut, you will do it wisely and not for after-repentance.

The spirit of cutting something is only an

inheritance of barbarism. The Malay runs amuck among his neighbors; the farmer runs amuck among trees. He must cut something when the spirit is on; so down goes the grand old tree that stood one hundred years before that fellow was in his cradle: a tree that has housed a thousand birds. I know a man who would go crazy at certain periods of the year if he could not lord it over his trees. He plants orchards, and cuts down others. He is surrounded by a queer combination of the garden of Eden and the Sahara desert. Another neighbor has so identified himself with every bush that he cannot endure to have the old wreckage cut away. His house is in a wood lot. Seek the middle road. Remove promptly the decayed and the hopeless; but love trees with a tenderness that is protective. Not long since some of the pioneer poplars of the streets of Chicago were slain. The people could not stop it. They begged and used every possible argument in vain. When the foreman came to the last tree, a quiet old gentleman who seemed too gentle to say "shoo!" to a fly, walked up to him, looked him in the eye, and with infinite contempt said, "Save the last one, sir,—to hang yourself on."

You can, however, do very little in the way of developing the grandest site with hedges, windbreaks and shelters, if you have misplaced your house. I am astonished at the persistence which Americans show in building close by the roadside, where they get no advantages except publicity and dust. The true place for a house is, other things being equal, as near the center of your property as it can be placed. Of course we are to consider the relation of the

parts; the relative hight of the land and convenience to water. The house must be upon high land—on a knoll if possible. It should be situated to take advantage of swales, for easy approach, if the land be hilly, and equally for convenient drainage. Yet the general rule holds good, to get away from the street, and as near as possible to the center of your land. This is a sound principle even on a lot of several acres. It is no loss of time that you involve yourself in while reaching your own door; for on the other hand, you are saving half the work of going from your house to different points of your ground; that is, while you are farther from the street you are nearer your gardens, orchards, pastures and meadows. You can more easily direct the work, and more thoroughly enjoy what is going on. But the real point is this, that by such a residence you have the sensation that the whole lot is your own. I think that one result will be that you will not have a bit of shaven lawn in front, over which you run the lawn mower every day, but no end of neglected lawns and other uncared-for property in the rear. The house being placed far back and drives established, you have a splendid opening for hedges to border your driveways, and to break up your whole plot into lawns, each one with its own idea. You will live among your gardens and your orchards and your shrubbery, all of which invite the aid of shelters, windbreaks, and different sorts of dividing lines. Bear in mind that a man who lays out a homestead that does not express an idea might as well live in the woods, or in the street.

Now I cannot get on rightly without saying that

the notion that there can be a purely architecturally handsome house is absurd. If a house is not built to the place it stands on, and for that place, as well as on that place, it is a humbug. It should have its windows, its balconies, its verandas, and all sorts of outlooks, adjusted to what can be seen and what can be heard, all around, out of doors. Outdoors and indoors should equally speak to each other. A professional architect seldom has the slightest conception of this need. He thinks only of the house; and it would be the same house if he planned it to stand somewhere else. But never should two houses be built exactly alike, because no two places are exactly alike where houses should stand. If you are going to plant hedges and other beautiful surroundings, do so in conjunction with and in relation to the house. A house should grow out of its position as much as the trees and the hedges do.

Nor will I speak of hedges in another way, as something that must be had, "you know," as a sort of conventional necessity. They are to be, and must be got in somehow. The result is a lot of green walls in the way, and every one of which ought to be dug out and burned. A right sort of hedge is a necessity; a wrong sort of hedge is about as bad a thing as a man can own. The right hedge ought to be; and it ought to be right there where it is. So you have first to study your place, to comprehend it, to take in all its possibilities, and plant accordingly. Nature generously gives you a hint here and there, if you are a teachable pupil. "Do you not see," she says, "that a drive could come easily up that swale, or around that knoll, and how thoroughly graceful

(118) FIG. 18. RESIDENCE WITH STREET HEDGE; AND ANOTHER WITHOUT.

the outlines of a bordering hedge would appear?" Then she takes you by the arm and says, "See there! The wind jumps right down from that hill and hits in front of your barn. What will you do about it? I, old Mother Nature, know what you ought to do; I have seen this for a long while, and I wanted you here for this particular purpose. You ought to have a windbreak along that west line. It must not cut off your outlook toward the bluff or the glen. It need not do so." So when you once really make the acquaintance of nature, she trots you about your place pointing out needs and possibilities, until you say, "By Jove! It's ten times as much of a property as I thought. And now with honest planting I am not going merely to utilize it, I am going to improve it. How clever nature is to leave us some things to do ourselves—but also to hint to us what is best to be done." Then she has her "studies" of all sorts; around in the wild lots, where she sends us to learn more about the beautiful and the useful.

Scott, in his "Beautiful Homes" cautions us against hedging our grounds, so that the passer-by cannot enjoy their beauty—"an absurd and unchristian custom," as much out of place as if we adopted walled courts and barred windows. This is a good argument when used against street hedges, which I have before stated should be abolished altogether, as out of taste and generally a nuisance. Where the streets are not artificially lightened, hedges darken the sidewalk, and, if they are tall, they drip water on the pedestrian in a rainstorm or tear away his umbrella. If kept well trimmed and low, they still have no object along the streets. I insist that we

shall always have this thought foremost: Does that which we do express a rational idea?

The chief danger with amateur planters is that, bewitched with the sense of the beautiful, they will wish to do too much. They wish everything beautiful that they see, or hear of, planted on their own grounds. Trees and shrubs are crowded together, and nothing is complete. Care and worry set in with dissatisfaction. A beautiful hedge becomes the ugliest thing in the world if not needed. It might as well be in the parlor as to be crowded into an over-full lawn. In and for itself alone it is beautiful; but that beauty is spoiled by being out of relation to other things. As a rule it should always suggest utility. It is closely associated with drives and walks and shelter, and these are never to be put in for mere ornament. Therefore not a rod of windbreak, or hedge, that is not needed right where it is placed, should ever be planted.

To create a sympathy with nature is the highest object of any book that deals with a section of nature. Nothing good can be done without it. We may stir up an enthusiasm for planting something, but the danger is that nothing exists in the minds of the planters, corresponding to what they propose to create outside of them and around them. A thousand hedges may eventuate in nine hundred wretched, neglected, obtrusive nuisances, struggling across the land, and only one hundred really good hedges. I should like to excite a mild passion for cutting as well as planting; a desire to remove the disagreeable, the offensive, and the idiotic. But in both directions, go slowly. Study first; experiment

as you go; waste no time nor money on great enterprises that you have not the culture or knowledge to bring to perfection.

If a lawn should express an idea, a hedge or a windbreak should have a part, and a very articulate part, in that conception. Most of our American landscape planting expresses confusion. A rightly-planted place has something to say to the passer-by. This group, this tree, this hedge, are here because they ought to be here. They are as exactly adjusted in the well-planted homestead as words in a well-expressed sentence.

"Nothing in this world is single,
All things by a law divine
In one another's being mingle—"

Every farmer should be a student of nature, and so should everyone who dares to make his home in the country. He should try to comprehend the wonderful material that he handles—the earth, the soil, the air, the trees, the insects, animal life and vegetable life. To this end our rural schools should point all their endeavor—to enable the young to understand the things they must touch and see. I shall be glad if I can get you to enter into the inner life of the hedge and of the hedge plant; the relation it bears to other plants; its inhabitants and what they want. Work with a microscope as well as a spade. I was one day about to destroy a lot of new insects on one of my hedges, but my boy, better educated, checked me with the exclamation, "Hold on, father! that is a friend of ours; it is a parasite, a new one, that has just appeared to destroy the hop louse." You will be a very clean man in all senses

of the word before you will be a good horticulturist. You will be something of a poet, and have a fullness of natural piety as well as careful scholarship.

Lewes, in his "Studies of Animal Life and Vegetable Life," says: "Come with me and lovingly study nature, as she breathes, palpitates and works under myriad forms of life—forms unseen, unsuspected, or unheeded by the mass of ordinary men. Our course may be through park and meadow, garden and land, over the swelling hills and spacious heaths, beside the running and sequestered streams, along the tawny coasts, out on the dark and dangerous reefs, or under dripping caves and slippery ledges. It matters little where we go; everywhere —in the air above, the earth beneath and waters under the earth—we are surrounded with life. Our studies will be of life. Nature lives; every pore is bursting with life; every death is only a new birth, every grave a cradle. Around us, above us, beneath us, the great mystic drama of creation is being enacted, and we will not even consent to be spectators. The life that stirs within us stirs in all else. We are all parts of one transcendant whole.

"The scales fall from our eyes when we think of this; it is as if a new sense had been vouchsafed to us, and we learn to look at nature with a more intimate and personal love. If the sequestered coolness of the wood tempt us to saunter into its checkered shade we are saluted by the murmurous din of insects, the twitter of birds, the scrambling of squirrels, the startled rush of unseen beasts, all telling how populous is this seeming solitude. We

pluck a flower, and in its bosom we see many a charming insect busy at its appointed labor. We pick up a fallen leaf, and if nothing is visible on it, there is probably the trace of an insect larva hidden in its tissues and awaiting development. Our very Mother Earth is formed of the debris of life. Begin our study where we please, we shall never come to an end—our curiosity will never slacken. Get a microscope. If you cannot borrow, boldly buy one. Few purchases will yield you so much pleasure. Soon contempt for anything in nature will give place to reverence. Soon you will discover that you do not live an independent life. You are dependent on the air, the earth, the sunlight, the flowers, the plants, the animals, and created things, directly or indirectly. Nor is the moral dependence less than the physical. We cannot isolate ourselves if we would."

Perhaps you think these passages from Mr. Lewes out of place in a book on hedges, trees and windbreaks. But I assure you that you will never be a good horticulturist until you get at the spirit as well as the form of things—until you have put yourself into relation to the All Life, that expresses itself in infinite, varied forms. No, you cannot even plant a hedge wisely without a sort of natural reverence, and an honest sympathy with all of nature about you.

I care not how men trace their ancestry,
To ape or Adam; let them please their whim;
But I in June am midway to believe
A tree among my far progenitors;

Such sympathy is mine with all the race,
Such mutual recognition, vaguely sweet,
There is between us. Surely there are times
When they consent to own me of their kin,
And condescend to me, and call me cousin,
Murmuring faint lullabys of eldest time
Forgotten, and yet dumbly felt with thrills
Moving the lips, though fruitless of the words.

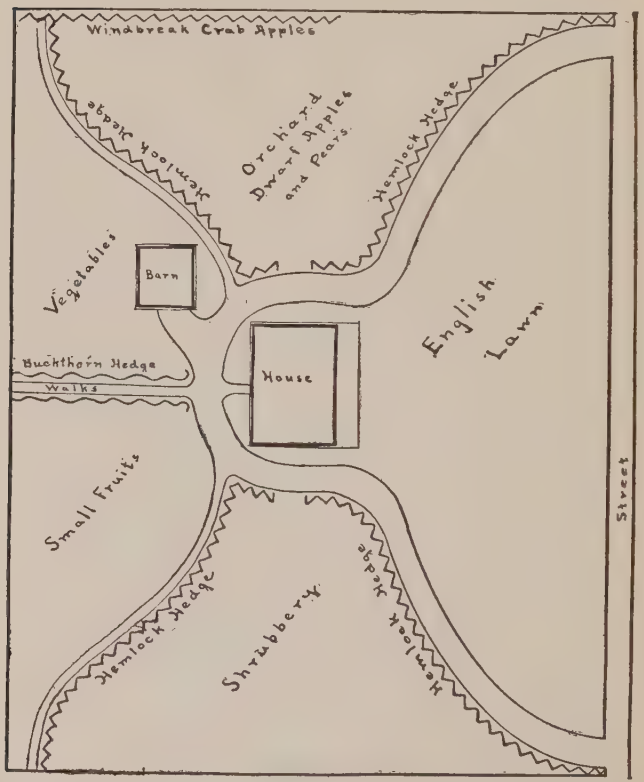



FIG. 19. VILLAGE PLOT WITH HEMLOCK HEDGES.

## CHAPTER VIII.

### RENOVATING THE DESERTED HOMESTEAD.

This chapter is for that growing number of people who have taken up an old farm or deserted homestead, to renovate it. Such a place has some invaluable properties now. Beware how you try to modernize it by stripping it of its antiquity, its old associations, and its historic verity. Go slowly and carefully with every stroke. Do not cut an old tree until you must, or are sure that you ought. You may find that you can enjoy the solid-built, old-fashioned house without tearing it down. I am sure that I can find for you a tree that is run over with grapevines, a pile of stones covered with clematis, a group of old evergreens with bittersweet festooned through it, or at least a stone fence clothed with Virginia creeper. These may need the touch of man, but without modernizing it.

First of all, in handling such a place as this, find out what its spirit is, and do not break in upon or disturb that. Association goes far to multiply charms. History is not a mere story, it is a life; and this old place of yours has a history, and, therefore, it has a life of its own that must not be mutilated. For this reason I urge, by preference, the purchase of the old family homestead or ancestral home—even if other spots have more natural beauty. A man's individual life is longer and wider for being lived as part of the

(126) FIG. 20. EVERGREEN CIRCLE ON LAWN, WITH BIRD HOUSE.

family history. Here in this arbor sat our sainted mother; here worked in this garden corner our father. This tree was planted by a grandfather. So everything gets to have a language, if not a poetry. My own homestead was bought by my father direct from the family to whom the Indians donated the land. On a high knoll stands the group of hemlocks of which the Oneida chief, Sconondoah, said: "I am an aged hemlock! The winds of a hundred winters have whistled through my boughs." These orchard trees were planted conjointly by this same chieftain and his missionary friend, Dominie Kirkland. The soil, the brooks, the rocks, the trees, the glen, have associations that unite them together, and give them an individuality. Every man should, if possible, know the history of his own home whether he knows the history of the United States or of the Anglo-Saxon nations or not. It then falls to him to add a chapter to this history, which is inherently beautiful, and useful, and worthy of being carved into trees, hedges, stone walls and buildings.

Still you will have room for exercising the full spirit and zeal of improvement. You will doubtless find there are no driveways and hedges and shelters; or if any, that others are still needed. Windbreaks are likely to be found in abundance. Do not let an ax touch an old clump of basswood, or a thicket, or a tangled mass of hemlock and wild grape —not until you are sure they are not what you want, after they have been cleaned and ordered. A few additions, a few dead limbs cut out, and you are likely to find what nature asks for. Beware of the professional landscape artist who comes to lay out

his patented pictures on your land. He will destroy in a day what you cannot recover in a century. Above all, look out for the professional trimmer. He will, if allowed, cut your evergreens into monstrosities. He thinks it beautiful to cut out the middle branches of your spruces, or to cut up from the bottom your pines. He likes green hens on top of hedges, and if let loose he will absolutely ruin the idea which nature has endeavored to work out. I advise everyone, who is going out of the city to take up a country home, to be very patient. Take time to think for yourself. Get acquainted with your land. Grow into it. If you were a boy here at one time, renew your association with the past. Plant nothing and cut nothing until you have got the whole place well gathered into your mind. Indeed, I recommend that you do very little for the first year, except to look out for sanitation and the simplest comforts. You will then be prepared to work in shelters where they are needed; you will know where the wind strikes, and you will be able to get at a shrubbery, and gardens with hedges and appropriate drives. I am sure that by the second year you will have lost the saw and ax passion.

It will generally turn out that, by careful study, you can use a large part of what is at hand, even including some defects. A little management, and a neglected corner, with half-decayed trees and thickets of underwood, can be gently trained and taught to speak of the beautiful and the useful. If you begin with the determination of cutting away everything that, looked at in and of itself is defective, you will end by cutting down everything on the

place. Remember, that that which is defective in itself may not be defective in relation to and combination with other things. Often the defective parts have so grown together as to create a unity of another sort; and while your hedges are severely overgrown by other things, you had better not interfere too sharply in your effort to restore absolute precision.

"Do not mistake me when I advise you to rely largely upon yourself; because you may be the very person above all others who is in need of a wise friend. I do not know you, so it may be as well to add, if you are confident that there is someone to be found who is judicious, who knows how to sympathize with nature, get him to walk with you and counsel you in forming your first impressions. Gardiner, in his "Homes and All About Them," says he would rather dig ditches for a philosopher than build palaces for a fool. There are these two classes also who wish advice about their lawns and their drives. The philosopher thinks, studies, and above all, grows. The fool knows everything at a glance. He cuts trees and he plants trees with a commodore's self-importance. It happens often that in doing this he injures his neighbors as well as himself. No man absolutely owns his acres and trees. He is under moral and sometimes legal obligation to the neighborhood. When he cuts down a grove or a windbreak he is opening the currents that drive against other people's homes. This an honest man will consider. Let me say to anyone who is going into the country for a home, Not only find the relation of the parts of your own land, but try to comprehend the

relation which your property bears to that of other people about you. Consult even the prejudices of those who live adjacent. They have formed their associations, their tastes, even their characters, largely from the trees and the collocation of the natural scenery that surrounds them. Disturb them just as little as possible. Indeed, there is a certain sort of property that another man has in what you claim as your own. Emerson sings:

> "One harvest from your field,
> Homeward brought your oxen strong,
> Another crop your acres yield,
> Which I gather in a song."

My plea is that you be careful of the feelings, the tastes and old associations that make up the neighborhood, of which you should be a component part. Press forward even your improvements considerately. It is possible to consult those whose judgment you do not value. In the long run, if you are right, you will improve not only your own property, but all the neighborhood; if you are wrong, and the chances are you will be, you will get time to correct yourself.

## CHAPTER IX.

### HOMES.

The final word is *Home*. Everything should have this in view—not a mere residence from which children can take flight, but a family home made up of the best that nature gives us, and from which no one cares to go. To create such a home, everything should be made to contribute. If you purpose to grow hedges, or to plant corn fields, or to raise Holsteins or Cotswolds as an *end*, you will prove a flat failure. If all of these things and many more are made constituent parts of home-building, you will succeed.

When a man feels that the time has come for him to establish himself on the earth; in other words, to create a home, the first thing he should decide to do is to develop himself into his surroundings, much as a mollusk grows a shell. Yet most people have not given a thought of what they would look like, if all their selfhood or character could be seen, as you can see their faces. It has been the business of this book to help you to understand yourself and your work; or at least set you to discussing what they are. When you have found yourself out, all you have to do is to grow. Grow out first into a house. Don't be fooled by trying to fit your soul into John Jones's shell or into David Williams's. Grow yourself into an easy-fitting, comfortable,

warm, cozy jacket of a house. Have a parlor if you need it, but not for somebody else. Of course you and your wife are one, and can grow together. Anyhow you will have to do this, and so you must let her feel easy also. But when the house is planned, or while it is growing, go on growing all over your place. Make it such that anyone coming along will say, "By George! that's Henry Owen's place! I'd know it by the cut of it!" Go slow—I mean grow slow—and find out where you want a tree, or hedge, or windbreak, or even a rosebush, before you plant it. Every bush, every tree, every fence, every windbreak or hedge should be a part of yourself; and when you get through with your first season's growth it will be apparent that your place means you as much as your body means you.

Then, by and by, when you begin to cut or trim, it will be just as when you pare your nails; it will be because something has overgrown in a perfectly natural way and must be pared off. A real home, rightly planted, never needs to be revolutionized; it is always, however, undergoing evolution. Having started right, you will see something to be added and something to be improved upon each year. A common-sense planter always works with a memorandum—that is, a pocket memory. Whenever he is about his property he jots down what he sees is needed—every little trifle and every suggested improvement. Every night he looks over his memoranda and marks what is to be done the next day. In this way nothing is overlooked; and fully five times as much progress will be worked in. Nor will breakages and little leakages be overlooked. He

will know that a board is loose, that a graft is to be waxed, that the aphis have made lodgment on one of his trees, that a new disease is to be fought with Bordeaux, that the time has come for battling the currant worms, or that a brook is washing into his garden, or that his strawberries are in need of water. In this way the mind is everywhere, without too much friction and without too severe a tax of the brain. The owner knows, every minute, everything about his place, and is never compelled to say of anything that is damaged that he had not knowledge of it in due time. I shall place as much emphasis as possible on this point, because I am convinced that no one will succeed with a beautiful rural home in any other way.

Nature takes care to put us into types; but she takes equal care to give us all individuality in features. She says look at your faces, and just take notice how vast the number of copies I can make; and in all the dissimilarity I shall not destroy the similarity. Now do you go and work after the same manner. Do you see that you do not simply try to make what someone else has made; and yet I wish you to follow the general type so as not to create monstrous things —like stone dogs and hedge roosters. John Burroughs says, "One of the greatest pleasures of life is to build a house for one's self;" but it is a greater pleasure to build a home. The house of a wise horticulturist is only one of his windbreaks and shelters. It is not here that he should exhaust his cash; but he should expend with equal liberality outdoors and indoors.

FIG. 21. SHELTER AND CROQUET GROUND.

I object to outdoor parlors; but I believe in outdoor and indoor sitting-rooms. About a beautiful home there is never any occasion for putting up "Keep off the grass." Every lawn should be free to the children and to visitors—at least to the children. But for all that there should be order and system about your home. The best plan is to prepare for games and sports from the very outset—lawn tennis, or croquet, or quoits, or all together. These will naturally draw the young gamesters away from the shrubbery and flower gardens when they wish to romp and play. A croquet ground should be absolutely level, and kept level by a nice stone wall; which should rise high enough to stop the balls from rolling into the grass. It should be graded with fine shale, and not a weed allowed to grow. Then plant a windbreak; or plant it behind the windbreak. Much of the fun of such a game is spoiled if we cannot play it on cool or windy days. Beside my own ground is a great living arbor in which are chairs, where those who need shade can get it. You will lose nothing by thus making your whole property homeful. You will have kept your boys and girls with you; and no possible influence can attract them away. In other words, they find you yourself everywhere, with your love and your smile.

What we wish to have the common folk see is that the end of home-getting is not to buy someone else's house; and that it is not even to have a house that you have built yourself; that a man or woman who would have a home must begin to live himself or herself out of doors until the grounds are a part of the habitation. Whoever proposes to build a

house must rather say, not, what will the house cost, but what will the homestead cost; and estimate altogether the cost of the planting of live trees as well as the sawing and hammering together of dead ones. If you spend less on dust-holding carpets and curtains, on bric-a-brac furnishings, and more on beautiful grounds you will live longer and more happily. If a real home grows rather than happens, there will always be present a sense of rest and repose. Hedges, windbreaks, coverts, shelters, suggest protection and comfort; if not they should never exist. The difficulty with many so-called homes is that everything is on edge all the while. You feel the constant presence of shears, and you hear the everlasting and detestable lawn mower—the one implement that never points to rest and to peace, but to clatter and toil. I smell sweat whenever I see one. Some housewives use a broom also in such a manner that it is a twin horror. You know that they watch your departing steps with the whisk of a broom, to send the dirt after you.

A man who builds a house without a room in it except for work and sleep has made exactly the same blunder as he who plants his acres for nothing but work and food. It is an old law that *man* cannot live by bread alone, whatever a four-legged animal may do. A right sort of home should, from its inception, include as an object the beautiful as well as the useful, expecting the two, in combination, to create the good. It is hardly necessary to add that with this idea of home operative, there is no room for mere display. Home wraps one around as clothes wrap a sensible person. They are put on

for comfort and good taste, not to exploit wealth. Gardens, trees, hedges, orchards, buildings, say plainly, not I am rich, but I am AT HOME.

Perhaps I have said enough in the course of my book to make it unnecessary to say here that nothing of this sort can be accomplished in the way of making a true home without sympathy with nature. A person who understands a bush gets in love with it, and knows what to do with it; and it must be understood that every bush has a character of its own. You may almost say that every tree has a moral character of its own. It is good in one place, and it is bad in another. Horticulture consists first of all in establishing this intimate acquaintance. If it is not established, you can do nothing in the way of wise planting. A city girl visiting my place enjoyed it immensely; but, after running about, picking flowers, and eating fruit for some hours, she sat down on the steps of the house, and taking a survey of the whole, said, "Well, it's immensely pretty, but it must be awful lonely here." "To be sure," I said, "to you. But don't you see, you don't know anybody here. But to us all these trees and plants have souls. We are all acquainted, and we all understand each other out here. The bushes, and the hedges, and the trees make a crowd of good company. Your friends all put on golf suits; but mine grow golf suits." The poor girl could not have possibly enjoyed the most beautiful country life for over one day. Her character had never grown a bush; her soul had never developed a rosebud.

Now, dear readers, I hope there are many of you—Good-by! I shall leave you at this point, as I

have another engagement. But I expect to visit some of you another day, and see how you have practiced on what I have written to you. I expect some of you will have gone quite ahead of my ideas, and will have in turn much to teach me. So at least I hope. If my book is a total failure, I shall expect you to tell me of it. And, hereafter, like a wise turtle, I will keep my head under my own experiences.

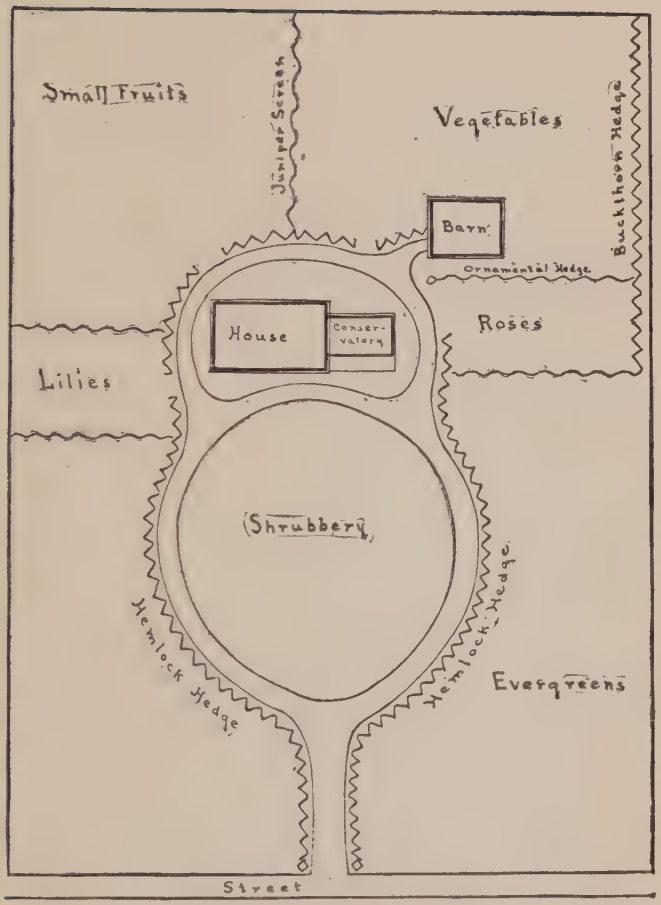



FIG. 22. GROUND PLAN OF SUBURBAN PLACE.

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